

for intimacy, touching, stroking and loving sex. Apparently harmonious relationships can lack this type of intimacy, which may lead to various psychosomatic manifestations.

Ideally, the family doctor should undertake a course in sexual counselling to promote confidence in the counselling process. Patients can be taught basic methods (where appropriate) such as sensate focus, squeeze or stop–start techniques for premature ejaculation, self-exploration using Kegel pelvic floor exercises, fantasy conditioning with books or videos, use of sex toys and behaviour modification. Complex or serious problems, especially those involving compulsive sexual behaviour, demand specialist referral.

The PLISSIT counselling model

The PLISSIT counselling model developed by Annon⁵ can be used to build the skills needed to deal with sexual problems, especially if there is a psychological element.

The mnemonic PLISSIT stands for:

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P = Permission giving

LI = Limited Information

SS = Specific Suggestion

IT = Intensive Therapy

‘Permission giving’ allows patients to talk about sex, ask questions, feel guilty and so on. Their problems are shared with a reflective listening confidant.

Most medically trained people can probably provide the limited information required about sexual physiology and behavioural patterns. ‘Specific Suggestion’ provides ideas for self-help and may include key reference books and relevant videos. With a little support and permission, the patient can take simple action to remedy or improve a problem.

Intensive therapy, whether psychiatric or emotional, calls for deeper involvement and can be a dangerous area for the inexperienced. Referral to an appropriate practitioner is usually advisable.

Analogous roles of the penis and clitoris

An explanation of the analogous roles of the penis and clitoris (proposed by Cohen and Cohen) may be a useful strategy for educating patients and helping them to understand the relationship of intercourse and penile and clitoris stimulation with orgasm. The simple model (see FIG. 108.1) can be shown to patients to explain, for example, why some women are unable to achieve orgasm by intercourse alone, especially using the conventional missionary position.³ It can readily be explained that clitoral stimulation in women is analogous to penile stimulation in men.

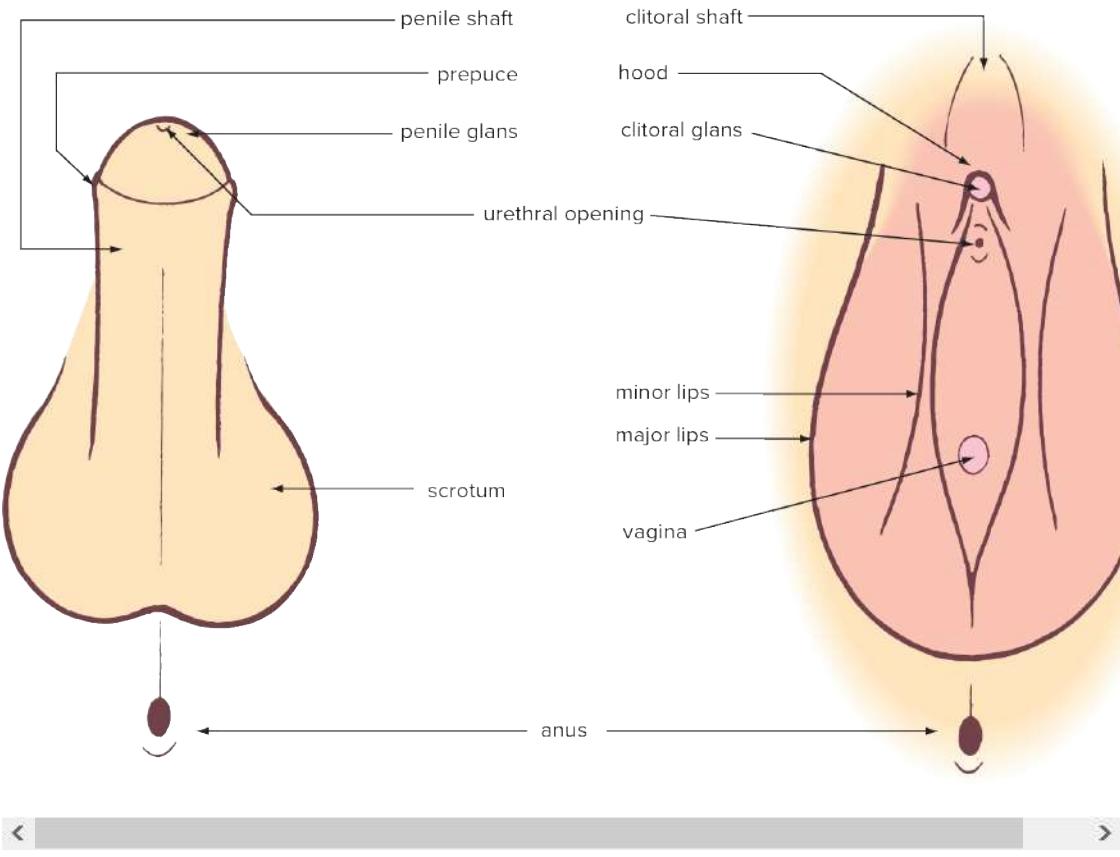


FIGURE 108.1 Analogous structures in male and female genitalia

Source: Reproduced with permission from G and M Cohen, Canadian Family Physician, 852; 31: 767–71³

Female orgasmic difficulties⁶

Difficulties with orgasm are common. If a person has never had an orgasm and is distressed by this, consider factors such as lack of sexual education, communication challenges with partners or inexperience with self-stimulation.

A biological cause is more common in acquired anorgasmia, especially as a result of medications and with endocrine or neurological disorders. Less intense or delayed orgasms may be expected with normal ageing.

If orgasm occurs during self-stimulation but not during sex with a partner, then underlying biological causes are unlikely. Difficulties within the relationship or with communication about sexual needs may be factors.

A common concern of women is the inability to regularly achieve orgasm through vaginal intercourse, believing there may be a physical cause. It is important to reassure that this is normal, as the majority of women are able to achieve orgasm through clitoral stimulation rather than intercourse.

The use of the Cohen model (see FIG. 108.1) is very helpful in emphasising the importance of clitoral stimulation.

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Treatment options for orgasm difficulties include:⁶

- mindfulness interventions
- relationship counselling
- cognitive behavioural therapy
- aids such as books, videos or vibrators
- sexual therapist/specialist treatment:
 - directed self-stimulation
 - sensate focus exercises
- testosterone therapy in postmenopausal women (may improve orgasms)

Dyspareunia

Painful intercourse is a source of considerable distress both physically and psychologically for the sufferer and also for her partner. Tact and sensitivity is very important in management.

In particular it is helpful to keep in mind vulval vestibular syndrome, which has subtle physical signs (see CHAPTER 99). Important causes are listed in TABLE 108.6 . A common problem encountered is the presence of painful scar tissue following an episiotomy, especially after vaginal delivery. Women who experience deep pain with intercourse need a gynaecological referral to assess for pelvic pathology.

Table 108.6 Important causes of dyspareunia

Pain worse on insertion

- Physiological—inadequate lubrication
- Vaginismus
- Pelvic floor muscle tightness
- Provoked vestibulodynia syndrome
- Vaginitis in chronic candidiasis
- Vulvar dermatoses (e.g. dermatitis, psoriasis, lichen planus)
- Vulvovaginal atrophy (e.g. postmenopausal)
- Postnatal perineal scarring
- Incompletely ruptured hymen

Pain worse on deep penetration

Endometriosis

PID

Pelvic adhesions

Ovarian and uterine tumours

Management of dyspareunia involves treating the organic cause and giving appropriate advice about the use of lubricants, including topical oestrogen where indicated. While this may be enough in simpler cases, it does not address the often accompanied fear of penetration,^{2,7} which can continue even after the cause of dyspareunia is addressed.

Explain that continuing to have painful intercourse can exacerbate the problem. It is appropriate to stop sexual practices that cause pain and continue other ways of being intimate (if comfortable), until the pain is adequately treated or resolved.⁶

Vaginismus²

Vaginismus is the involuntary contraction of muscles around the introitus (outer third of vagina) in response to and preventing the possibility of penetration. It can be classified as primary or secondary. In primary vaginismus, tampons will probably never have been inserted. It is often related to provoked vestibulodynia (vestibular hypersensitivity—see [CHAPTER 99](#)).

A fear of penetration can be the underlying cause and may be associated with fears of internal damage, pregnancy, learned negative attitudes to sex and past sexual trauma. The problem may respond to sensitive exploration of fears and education of the anatomy and physiology. Encourage use of lubricant and a comfortable sexual position that the woman can control, usually superior.

Consider referral to specially trained physiotherapists for pelvic floor relaxation and use of vaginal trainers. Vaginal trainers can be inserted at increasing sizes for desensitisation, allowing for progressive vaginal dilation. Expert counselling is necessary if fears remain a barrier to recovery.

Low libido in females²

The Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) defines lack of libido in women as sexual interest/arousal disorder (FSAD).⁸ Low sexual arousal or desire is a problem when it is out of keeping with the age of context of the patient and is causing distress.

Lack of libido is usually due to a combination of factors including relationship issues, illness, medications, drug and alcohol use, hormonal changes, stress and fatigue.

Individuals or couples may benefit from basic sexual counselling from their GP, while others

may request input from a relationship counsellor or sex therapist. If lack of libido is secondary to menopause, a trial of menopause hormone therapy (MHT) may be useful. Tibolone is an MHT that has been shown to have benefit in managing loss of libido in some women.⁶ Use of transdermal testosterone is effective in postmenopausal women with low libido (see CHAPTER 97).

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Concerns about labia

Demands for labiaplasty, the surgical reduction of the labia minora, has significantly increased in Australia. The portrayal of hairless, prepubescent external genitalia in the media has contributed to concerns about labia, although this is not representative of society.⁹ It is appropriate to provide sensitive education regarding the normal appearance of labia. Labia library (see: labialibrary.org.au) is a helpful resource.

Low libido in males⁶

Low libido in men is defined as male hypoactive sexual desire disorder (MSHDD).⁸ It is under-reported and under-recognised. Erectile dysfunction and premature ejaculation often accompany low libido and may be contributing factors. Other contributing factors may include androgen deficiency (see CHAPTER 102), insomnia, obesity, illness, fatigue, depression, relationship factors and concerns regarding gender identity or sexual orientation.

Address underlying conditions and consider referral for psychological therapy or to a sex therapist. Testosterone is not indicated for treatment of low libido in males unless they have androgen deficiency.

Erectile dysfunction

Erectile dysfunction (impotence) is the inability to achieve or maintain an erection of sufficient quality for satisfactory intercourse.

Erectile dysfunction is common. In an Australian study, the overall prevalence of erectile dysfunction was 61% (25% sometimes, 19% usually and 17% had complete erectile dysfunction). More than 20% of healthy men aged 60–65 years with no risk factors had moderate or complete erectile dysfunction.⁴

Traditionally, the aetiology of erectile dysfunction is classified into organic, psychogenic or mixed. In reality, however, anxiety and depression commonly accompany erectile dysfunction, irrespective of the original aetiology. Consequently, nearly all organic erectile dysfunction will eventually become ‘mixed’.¹⁰

Consider a psychological cause if onset is sudden, whereas an organic cause is more likely to be gradual.

Causes

- Psychogenic: related to stress, interpersonal or intrapsychic factors (e.g. depression, marital disharmony, performance anxiety)
- Neurogenic: disorders affecting the parasympathetic sacral spinal cord (e.g. multiple sclerosis); it usually develops gradually
- Vascular
- Diabetes
- Hypertension
- Chronic kidney disease
- Urological problems (e.g. Peyronie disorder, Pelvic trauma and surgery)
- Hormone disorder:
 - androgen deficiency (e.g. testicular disease)
 - hypothyroidism
 - hyperprolactinaemia (rare) → impotence and loss of libido due to secondary testosterone deficiency
- Drug-induced:
 - alcohol
 - cocaine, cannabis
 - nicotine (four times the risk by age 50)
 - antihypertensive agents
 - finasteride
- Ageing
- Unknown

Practice tip

Erectile dysfunction may be the first symptom of atherosclerotic disease (e.g. CAD).

History

The nature of the onset of erectile dysfunction is very important and this includes the nature of the relationship. Of particular importance is a drug history, including alcohol, nicotine, recreational drugs and pharmaceutical agents, particularly antihypertensives (beta blockers and thiazide diuretics), hypolipidaemic agents, anti-androgens (prostate cancer treatment), antidepressants, antipsychotics and H₂-receptor antagonists. Ask about nocturnal and early morning erections.

Examination

Genitourinary, cardiovascular and neurological examinations are appropriate, although may not reveal the diagnosis. A focused examination should include a rectal examination and examination of the vascular and neurological status of the lower limbs and the genitalia, especially the testicles and penis. Check the cremasteric and bulbocavernosus reflexes.

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Investigations

First-line blood tests:

- morning serum total testosterone
- TSH
- prolactin
- luteinising hormone (LH)
- FSH
- fasting blood glucose

Other blood tests to consider:

- LFTs, especially GGT (alcohol effect)
- kidney function tests
- lipid studies

When the aetiology is unclear, specialist testing includes a penile duplex doppler ultrasound using an intracavernosal vasoactive agent.

Management

Address modifiable risk factors, including medications (if feasible), psychosocial issues and lifestyle (see NEAT, [CHAPTER 5](#)). Management should comprise appropriate patient

education. The partner should be included in the discussions and general management process with an emphasis on bolstering the couple's self-image, which may have been affected by feelings of rejection or avoidance.

Psychogenic disorders

These involve psychotherapy and sex behavioural modification as outlined earlier in this chapter under Basic sexual counselling. Referral to a consultant may be appropriate.

Oral medication

PDE-5 inhibitors: the phosphodiesterase type 5 (PDE-5) inhibitors are the first-line oral medication (see TABLE 108.7). They are about 70% effective but not very effective for neurogenic ED. They do not initiate an erection but enhance whatever erection the man is capable of having. Sexual stimulation is necessary. They are contraindicated if the patient has unstable angina, recent stroke or myocardial infarction. Use with nitrates should be avoided and a nitrate should never be taken within 24 hours of use. The interaction with nitrates can result in a severe and potentially fatal hypotensive response. PDE-5 inhibitors have the potential for side effects, especially headache. Treatment is not considered a failure until a full dose has been trialled 7–8 times.¹¹

Table 108.7 Phosphodiesterase type 5 inhibitors¹⁰

	Sildenafil (Viagra)	Avanafil (Spedra)	Tadalafil (Cialis)	Vardenafil (Levitra)
Dosage (mg)	25, 50, 100	50, 100, 200	5, 10, 20	5, 10, 20
Usual starting dose (1 hour pre i/c)	50 mg	100 mg	10 mg	10 mg
Peak effect	1 hour	30 to 45 minutes	2 hours	1 hour
Half-life (approximately)	4 hours	6 to 17 hours	18 hours	4 hours
Class side effects	Headache, nasal congestion, facial flushing, dyspepsia			
Specific side effects	Blue vision, diarrhoea	Back pain	Myalgia, back pain	Visual disturbance

Tadalafil can be taken daily (at a lower dose, 2.5 to 5 mg) rather than intermittently for erectile

dysfunction. Use with caution in patients with renal impairment.

Intrapenile injection⁶

Intracavernosal vasodilator injections are second-line therapy and should be supervised by an experienced practitioner.

Alprostadol intracavernosal injections:

- self-administered after supervised teaching (use a penile model if available)
- start with a lower dose, 2.5–5 mcg
- spontaneous erection in 5–20 minutes
- if prolonged erection >2 hours, take 120 mg pseudoephedrine orally and have a hot shower—repeat at 4 hours if necessary (provided not hypertensive)

Vacuum constriction

Vacuum constriction devices (VEDs) may have a place in management, where pharmacological therapies have failed or are inappropriate. VEDs are often poorly tolerated in the long term due to side effects such as pain, inability to ejaculate, bruising, ‘hinging’ and paraesthesia.¹⁰

Surgery

- Malleable penile prosthesis
- Inflatable penile prosthesis (see FIG. 108.2)

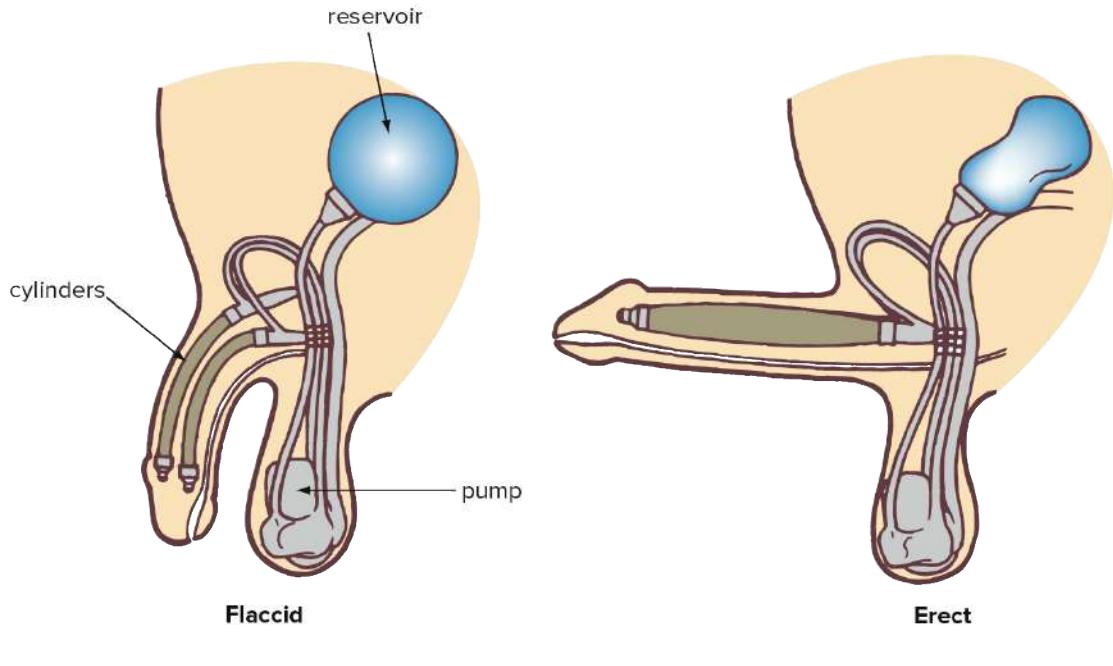


FIGURE 108.2 An inflatable prosthesis, showing positioning of the components

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Premature ejaculation

Premature ejaculation is defined as ‘ejaculation that occurs sooner than desired’ or, more precisely, as ‘persistent or recurrent ejaculation, before, on or shortly after penetration and associated with significant personal distress’. In most cases, this occurs within 1 minute of vaginal penetration. It may not be clearly described by the patient so a careful history is necessary to define the problem. Ensure that the person is not suffering from erectile dysfunction. Both patient and partner may complain about the problem.

There are many approaches to treatment but they are aimed either at prolonged ejaculatory control or at satisfactory sexual activity without preoccupation with ejaculation.

Non-pharmacological treatment includes psychosexual therapy and/or behaviour therapy (including ‘stop–start’ techniques).

Pharmacological treatment

SSRIs have also been reported as effective—using dapoxetine 30 mg, sertraline 50 mg or paroxetine 20 mg, all about 3 hours before intercourse.⁶ Some men may prefer to take SSRIs daily for managing premature ejaculation. Local anaesthetic has been suggested to reduce penile sensation; however, this tends to be counterproductive as it reduces sexual pleasure.²

Concerns about the penis

In general practice it is not uncommon to counsel men and adolescent males for anxiety about the size or appearance of their penis. The presence of pearly penile papules (see [CHAPTER 105](#)) often requires considerable reassurance. Educate that penile size has little relationship to a partner's satisfaction from sexual intercourse.

The average adult penis length is 7.5–10.5 cm when flaccid and 12–18 cm when erect.

Gender and sexual orientation¹²

For some individuals, gender identity and sexual orientation are fixed and clear, while for others it may be more fluid. It is worth noting that identity, attraction and behaviour are not necessarily congruent.

Biological sex is determined by sex chromosomes, reproductive organs and hormones, however, not everyone identifies with the gender assigned to them at birth. Gender *identity* is the internal experience of gender, and gender and sexual *expression* is how a person chooses to express their gender in terms of appearance and mannerisms.

An Australian study found that 14.7% of women are same sex attracted, 13.5% engage in same sex behaviour, 1.2% identify as lesbian and 2.2% are bisexual; and 6.8% of men are same sex attracted, 6.0% engage in same sex behaviour, 1.6% identify as gay and 0.9% bisexual.¹³

It is estimated that up to 8% of Australians are gender diverse and individuals who are intersex constitute 1.7% of births in Australia.

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Glossary of terms

Lesbian A woman who experiences an attraction to other women.

Gay A man who experiences attraction to men. Men who have sex with men (MSM) do not always identify as gay. It can also be used as an umbrella term to describe both lesbians and gay men and perhaps bisexual people of both sexes.

Bisexual A person who experiences attraction to their own as well as the opposite gender.

Transgender A person whose gender identity and/or gender expression differs to their birth sex. Sexual orientation varies and is not dependent on gender identity.

Trans man or FTM (female-to-male) A person assigned the female gender at birth who identifies on the male spectrum.

Trans woman or MTF (male-to-female) A person assigned the male gender at birth who identifies on the female spectrum.

Intersex People who are born with genetic, hormonal or physical sex characteristics that are not typically ‘male’ or ‘female’. Causes include congenital adrenal hyperplasia and androgen insensitivity syndrome. Intersex individuals can have a broad range of gender identities and sexual orientations.

Queer A political statement as well as a sexual orientation which advocates non-binary thinking and seeing both sexual orientation and gender identity as potentially fluid.

Non-binary A gender identity that is neither exclusively woman or man, is in-between or beyond both genders.

Gender-fluid A person who does not identify themselves as having a fixed gender.

Cisgender A person whose gender identity corresponds to their sex at birth.

Gender incongruence¹⁴

Gender incongruence, when a person’s biological sex and gender identity do not align, is no longer considered a mental health disorder. There has been a move away from mandatory psychiatric assessment, in favour of a patient-centred, informed consent model of care.

Trans, gender diverse and non-binary (TGDNB) people may present to their GPs requesting gender-affirming care, including psychological support, a request for gender-affirming hormones or transgender-specific surgeries. Providing earlier access to gender-affirming care improves the health outcomes and well-being of TGDNB people. GPs are playing an increasing role in prescribing gender-affirming hormones.

Prescribing gender-affirming hormones¹⁴

- Assess and document capacity to give informed consent.
- Counsel regarding expectations of treatment, potential complications and side effects.
- Exclude contraindications to hormone therapies.
- Goal is to align physical appearance with gender identity.
- Hormone therapy should be individualised.
- Start with low doses and titrate gradually.
- Hormone therapy is usually lifelong, although some patients may choose to cease treatment.

- Hormone therapy should not be relied on for contraception.
- Regular monitoring of hormone levels, FBE, LFTs and renal function is required.
- Regular clinician review is essential.
- Details on dosing can be found at: <https://cdn.thorneharbour.org/media/documents/ht-prescribing-guideline-v3-aug-2020.pdf>.

Feminising hormones

- Oestradiol valerate tablets, transdermal oestradiol or oestradiol implant
- Early changes include calmer mood, softer skin, reduced libido, erectile dysfunction
- Further changes over time include body fat redistribution, reduced muscle mass, decreased testicular volume, breast development
- Side effects include nausea, DVT, gall stones, liver impairment and infertility
- Sperm cryopreservation should be discussed prior to commencement of therapy
- Progesterone is less frequently prescribed, lacking evidence of efficacy

Anti-androgens

- Spironolactone or cyproterone acetate tablets
- Usually prescribed alongside oestradiol to reduce testosterone levels
- Changes include slower growth of body hair, improved acne, reduced libido, erectile dysfunction; facial hair usually persists
- Most common side effect is fatigue

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Masculinising hormones

- Testosterone injection, gel or cream
- Early changes include acne, increased libido, increase in clitoral size
- Further changes over time include amenorrhoea, body fat redistribution, muscle growth, increase in body and facial hair and voice deepening
- Side effects include androgenic alopecia, atrophic vaginitis, sleep apnoea and polycythaemia
- Voice deepening is irreversible

- Menstruation and fertility return on cessation of treatment

Children and adolescents

Given gender identity develops in the first four years of life, children may also require gender-affirming care. For patients <16 years of age, consideration of puberty blockers and gender-affirming hormones generally occurs in a tertiary setting.

For patients with dysphoria relating to menstruation, a prescription of norethisterone 5 mg orally twice daily may provide temporary amenorrhoea.

Resources

Jean Hailes Foundation: www.jeanhailes.org.au

Rainbow Health Victoria: www.rainbowhealthvic.org.au

AusPATH, Australian Professional Association for Trans Health: www.auspath.org

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109 Sexually transmitted infections

He who immerses himself in sexual intercourse will be assailed by premature ageing, his strength will wane, his eyes will weaken, and a bad odour will emit from his mouth and his armpits, his teeth will fall out and many other maladies will afflict him.

MOSES BEN MAIMON (1135–1204), *MISHNEH TORAH*

Sexually transmitted infections (STIs) are a group of communicable infections, usually transmitted by sexual contact. STIs that have developed a high profile include chlamydia, the most common notifiable disease in Australia and a major cause of pelvic inflammatory disease (PID), HIV infection, syphilis and multi-drug resistant gonorrhoea. Presentations of STIs are summarised in TABLE 109.1 ; however, most STIs are asymptomatic.

Table 109.1 Presentations of STIs and causative organisms¹

Presenting condition	Causative organisms
Urethritis (male)	<i>Neisseria gonorrhoeae</i>
Non-gonococcal urethritis (NGU)	<i>Chlamydia trachomatis</i> <i>Mycoplasma genitalium</i> Herpes simplex virus <i>Trichomonas vaginalis</i> <i>Ureaplasma urealyticum</i> Adenovirus
Epididymo-orchitis	<i>Chlamydia trachomatis</i> <i>Neisseria gonorrhoeae</i>
Anorectal syndromes (proctitis)	<i>Chlamydia trachomatis</i> (including <i>Lymphogranuloma venereum</i> or <i>LVG</i>) <i>Neisseria gonorrhoeae</i> <i>Mycoplasma genitalium</i>

	Herpes simplex virus
Vaginal discharge and cervicitis	<i>Chlamydia trachomatis</i> <i>Neisseria gonorrhoeae</i> <i>Mycoplasma genitalium</i> Herpes simplex virus <i>Trichomonas vaginalis</i>
PID	Polymicrobial, unidentified cause 70% <i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i> <i>Mycoplasma genitalium</i>
Anogenital ulcers	Herpes simplex virus <i>Treponema pallidum</i> (chancre) <i>Klebsiella granulomatis</i> (donovanosis), rare <i>Haemophilus ducreyi</i> (chancroid), rare
Anogenital lumps	Pox virus (<i>molluscum contagiosum</i>) Human papillomavirus (genital warts) <i>Treponema pallidum</i> (condylomata lata/syphilis)
Genital itch	<i>Phthirus pubis</i> (pubic lice) <i>Sarcoptes scabiei</i> (scabies)
Systemic illness	Human immunodeficiency virus (HIV) Hepatitis B Hepatitis A and C (rare sexual transmission) <i>Treponema pallidum</i> (syphilis)

Key facts and guidelines

- In Western society most patients with STIs are in the 15–30 years age group.
- Chlamydia is detected in approximately 1 in 20 young Australians who have screening tests in general practice.²
- Not all STIs manifest on the genitals.
- Not all genital lesions are STIs.
- *Chlamydia trachomatis* is the commonest cause of urethritis.

- Up to 50% of men and 75% of women with chlamydia may be asymptomatic.¹
- Gonorrhoea may cause no symptoms, especially in women.
- STIs such as donovanosis, lymphogranuloma venereum and chancroid occur mainly in tropical countries.
- HIV infection, which is predominantly sexually transmitted, should be considered in any person at risk of STIs and blood-borne viruses (BBVs). It presents as an acute febrile illness (similar to Epstein–Barr mononucleosis).
- All sexually active young people aged 15–29 years should be tested annually for chlamydia with a first-pass urine or genital swab.²

Who is at risk of STIs?³

- Young people aged 15–29 years
- Men who have sex with men (MSM), especially:
 - unprotected anal sex
 - >10 partners in past 6 months
 - participate in group sex
 - use recreational drugs during sex
 - are HIV-positive
- Aboriginal and Torres Strait Islander people
- Sex workers
- People who inject drugs
- People with a past history of STIs
- People who have unprotected sex with casual partners
- People who have unprotected sex overseas
- Sexual partners of a person with an STI
- Pregnant women (more detail in CHAPTER 100)
- Neonates born to infected mothers

Practice tip

Explain and demonstrate the importance of negotiating condom use.⁴

Asymptomatic STI testing⁵

Since most STIs are asymptomatic, it is important to offer appropriate opportunistic testing to people at risk. A discrete history is also important—a detailed history and examination may serve as a barrier to proceeding to testing. Consider the following questions:

- Before we do a cervical screening test/prescribe your pill, would you also like a chlamydia test?
- It is recommended that anyone under 30 years of age who is sexually active should have an annual chlamydia test. Would you like a test today?
- I would like to ask you some questions about your sexual activity so we can decide what tests to do, is that okay?

Patients often request to be ‘tested for everything’ and it is important to explain that certain STIs, in particular genital warts and genital herpes, are not tested for in asymptomatic people. Genital warts is a clinical diagnosis, and herpes is diagnosed on a swab of a specific lesion.

Guidelines on STI testing in asymptomatic patients are summarised in TABLE 109.2 . Nucleic acid amplification tests (NAATs), such as polymerase chain reaction (PCR), should be employed on swabs in asymptomatic patients. TABLE 109.3 outlines how to test for each infection.

Table 109.2 STI testing in asymptomatic patients⁶

Who?	What infection?	How often?
Young people (age 15–29)	Chlamydia Hepatitis B	Annually Confirm immune status*
Men who have sex with men (MSM)	Chlamydia Gonorrhoea Syphilis HIV Hepatitis A Hepatitis B Hepatitis C	Annually, 3 monthly if higher risk Confirm immune status* If HIV positive, on PrEP or history of injecting drug use
Asymptomatic people	Chlamydia	Annually

requesting STI testing	Gonorrhoea Syphilis HIV Hepatitis B	Frequency according to risk Confirm immune status*
Aboriginal and Torres Strait Islander people	Chlamydia Gonorrhoea Syphilis HIV Hepatitis C Trichomonas Hepatitis B	Annually Consider a low threshold for testing Rural/remote areas Confirm immune status*
People who inject drugs	Chlamydia Gonorrhoea Syphilis HIV Hepatitis C Hepatitis A Hepatitis B	Annually Frequency according to risk Confirm immune status*
Sex workers	Chlamydia Gonorrhoea Syphilis HIV Hepatitis B	Frequency according to risk/requirements Confirm immune status*

*Vaccinate if non-immune

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Table 109.3 How to test in asymptomatic patients⁶

Infection	Specimen collection	Test
Females		
Chlamydia	Vaginal swab or first-pass urine or endocervical swab	Chlamydia NAAT (PCR)
Gonorrhoea	Vaginal swab or first-pass urine or endocervical swab and for sex workers: throat swab	Gonorrhoea NAAT (PCR)

Trichomonas	Vaginal swab or first-pass urine	Trichomonas NAAT (PCR)
Males		
Chlamydia	First-pass urine <i>and</i> for MSM: throat swab, rectal swab	Chlamydia NAAT (PCR)
Gonorrhoea	First-pass urine <i>and</i> for MSM: throat swab, rectal swab	Gonorrhoea NAAT (PCR)

Blood tests in females and males

Infection	Test
Syphilis	Syphilis serology
HIV	HIV Ab/Ag
Hepatitis A	Anti-HAV Ig-total
Hepatitis B	Anti-HBc Anti-HBs
Hepatitis C	HCV Ab

Note: All swabs can be self-collected except an endocervical swab, which requires collection by the clinician. First-pass urine is preferably collected at least one hour after last passing urine and does not have to be the first urine of the day.

Testing after exposure¹

Patients may present requesting STI testing following condom breakage or suspected STI exposure/contact. Postexposure prophylaxis (PEP) for HIV or hepatitis B immunoglobulin and immunisation may be appropriate within 72 hours if moderate to high risk (more detail in [CHAPTER 110](#)). Testing should be performed, depending on risk, at the following intervals:

- HIV, syphilis and hepatitis B (if not immune)
 - baseline testing, repeat at 6 and 12 weeks
- chlamydia, gonorrhoea and trichomonas
 - initial screening with swab of any involved orifice, repeat at 2 weeks after contact for definitive negative or earlier if symptomatic

Taking a sexual history^{1,5}

A detailed sexual history may be important if a patient presents requesting STI testing or if they present with symptoms. Doctors and patients alike usually find discussing sexual matters uncomfortable, even when STI testing is requested. A skilful approach will help overcome

barriers or discomfort. A non-judgmental approach and appropriate body language will facilitate patient disclosures on sensitive sexual issues.

- Are you currently in a relationship?
- How many sexual partners have you had in the past 3–12 months?
- Were these casual or regular partners?
- Were your sexual partners male, female or both?
- When you had sex, was it vaginal, oral or anal sex?
- Did you use condoms?
- Have you ever been diagnosed with or thought you had an STI?

For a detailed STI risk assessment:

- I'd like to ask you about some other activities that could increase someone's risk of some sexually transmitted infections and blood-borne viruses, is that okay?
- Have any of your male partners ever had sex with men?
- Have you ever been paid to have sex?
- Have you ever paid to have sex?
- Have you received any tattoos overseas?
- Have you ever injected drugs and, if so, have you ever shared needles?
- Have you ever been in jail?
- Are you a recent migrant or refugee?

Presenting conditions¹

Urethritis in men

Urethritis can be classified as gonococcal or non-gonococcal urethritis (NGU). NGU is caused most commonly by *Chlamydia trachomatis* and *Mycoplasma genitalium*; however, it is common to not find any cause. Other organisms include herpes simplex virus (HSV), adenoviruses and *Trichomonas vaginalis*, whereas *Ureaplasma urealyticum* is considered normal urethral flora.

Symptoms

The main symptoms (if present) are:

- a burning sensation when passing urine (dysuria)
- a penile discharge or leakage (clear, white or yellow)

Sometimes there is no discharge, just pain. Most often the symptoms are trivial with chlamydia. Although a creamy pus-like discharge is typical of gonorrhoea (see FIG. 109.1), and a less obvious milky-white or clear discharge typical of chlamydia (see FIG. 109.2), it is often difficult to differentiate the causes from the discharge. In some males the only complaint is spots on the underpants or dampness under the foreskin.



FIGURE 109.1 Gonococcal urethritis: typical purulent discharge



FIGURE 109.2 Chlamydia urethritis: the discharge is usually milky in colour but can also be yellow

Diagnosis

- First-pass urine (FPU) for *Chlamydia* and *Gonorrhoea* NAAT
- If discharge—urethral swab for microscopy and culture

Management principles

- Given the prevalence of chlamydia in the community, it is recommended to treat with doxycycline 100 mg (o) bd for 7 days while waiting for test results.
- Use of a stat dose of azithromycin is no longer first-line management, as its use is driving mycoplasma resistance.
- If tests are negative and symptoms persist, consider referral for first-pass urine NAAT testing for *Mycoplasma genitalium*, HSV and adenovirus (if not available through general practice).
- Consider seeking specialist advice before treating infection other than chlamydia/gonorrhoea.
- Regardless of results, female partners are at greater risk of PID and require assessment.

⌚ Chlamydia

Incubation period

Symptoms usually develop 1–2 weeks after intercourse, but may take longer.

Presentation

50% of men and 75% of women are asymptomatic. Genital and anorectal infections are most common, with rare infections of the eye and oropharynx.

Infection in men can cause urethritis and lead to epididymo-orchitis. In women, infection can cause cervicitis with vaginal discharge and intermenstrual or postcoital bleeding.

Male symptoms:

- urethritis (dysuria, penile discharge)
- testicular pain
- anorectal symptoms

Female symptoms:

- dysuria
- intermenstrual or postcoital bleeding
- vaginal discharge
- dyspareunia, pelvic pain (due to PID)
- increased dysmenorrhoea
- anorectal symptoms

Complications

- Epididymo-orchitis
- Pelvic inflammatory disease (PID)
- Tubal factor infertility and ectopic pregnancy
- Chronic pelvic pain
- Perinatal conjunctivitis or pneumonia
- Reactive arthritis ± conjunctivitis (Reiter syndrome)
- Conjunctivitis

Treatment

For uncomplicated genital or pharyngeal infection:

doxycycline 100 mg (o) 12 hourly for 7 days (preferred)

or for pregnant women or patients likely to be non-adherent to doxycycline

azithromycin 1 g (o) single dose⁷

For anorectal infection:

doxycycline 100 mg (o) 12 hourly for 7 days if asymptomatic, 21 days if symptomatic (to cover for LVG)¹

Sexual intercourse must be avoided until 7 days after both partners have received treatment. Reinfection rates are high so retest after 3 months.

Gonorrhoea

Gonorrhoea is most common in MSM, Aboriginal and Torres Strait Islander people living in rural and remote areas, and travellers from endemic areas.

Incubation period

Gonorrhoea has a short incubation period of 2–3 days and symptoms usually appear 2–7 days after vaginal, anal or oral sex.

Presentation

Up to 80% of women and 10–15% of men have no genital symptoms and most people are asymptomatic in other sites, especially the pharynx, rectum and endocervix. Upper genital infection can lead to pelvic inflammatory disease in women. Gonococcal urethritis in men is characterised by a purulent urethral discharge.

Other manifestations of gonorrhoea

- Epididymo-orchitis and prostatitis (males)
- Perinatal conjunctivitis or pneumonia
- Reactive arthritis ± conjunctivitis (Reiter syndrome)
- Conjunctivitis
- Disseminated disease including septic arthritis and macular rash

Investigations

NAATs for gonorrhoea are highly sensitive, but false positives can occur at non-genital sites. Gonococcal culture is not as sensitive but has high specificity and allows for antibiotic susceptibility testing. If a NAAT is positive, a swab should be obtained (if not already collected) for culture to determine antibiotic susceptibility prior to commencing treatment.

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Treatment

Alternative treatments are not recommended because of high levels of resistance.

For uncomplicated genital, anorectal or conjunctival infection:¹

ceftriaxone 500 mg IM (dissolved in lignocaine 2 mL 1%) as a single dose

plus

azithromycin 1 g (o) as a single dose

For uncomplicated pharyngeal infection:

ceftriaxone 500 mg IM (dissolved in lignocaine 2 mL 1%) as a single dose

plus

azithromycin 2 g (o) as a single dose

Sexual intercourse must be avoided until 7 days after both partners have received treatment. Test of cure should be performed 2 weeks after treatment is completed. Repeat testing at 3 months is recommended.

§ *Mycoplasma genitalium*³

Mycoplasma genitalium should be considered in patients with persistent genital tract symptoms when chlamydia and gonorrhoea have been excluded. It has been identified as a cause of urethritis in men, proctitis, cervicitis and PID.

Testing has not been widely available, although access to commercial assays is increasing. NAAT can be performed on vaginal, cervical and rectal swabs or first-pass urine. Testing is only offered to asymptomatic patients if a symptomatic partner has tested positive and there is ongoing sexual contact.

Optimal treatment is still unclear with increasing macrolide resistance, which is the reason why doxycycline is now recommended for empirical treatment of NGU. Consult local guidelines or specialist advice for recommended treatment. A commonly used regime includes:

doxycyline 100 mg (o) bd for 7 days *initially*
followed by either
azithromycin 1 g (o) on the first day, then 500 mg daily for 3 days
or if macrolide resistance is confirmed or suspected,
moxifloxacin 400 mg orally, daily for 7 days⁷

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Anorectal syndromes (proctitis)

Proctitis is characterised by anal discharge, pain and bowel symptoms including tenesmus and constipation. The most common causes are HSV, *N. gonorrhoea* and *C. trachomatis* (including lymphogranuloma venereum, LGV). Other causes include *M. genitalium* and non-STI causes such as inflammatory bowel disease, *Campylobacter* and *Shigella*.

It is important to perform an examination and collect swabs at the time. Request NAAT for HSV and *C. trachomatis* and culture and NAAT for *N. gonorrhoea*. LGV should be tested in the event of a positive chlamydia test, which requires the same treatment as symptomatic anorectal chlamydia infection.

Treatment should be empirical, taking into account the clinical picture and likelihood of particular STIs in the patient. Consider a combination of ceftriaxone 500 mg (IM) stat, doxycyline 100 mg (o) bd for 14–21 days and antiviral therapy (e.g. valaciclovir 500 mg (o) bd for 5 days).⁷

Epididymo-orchitis

Epididymo-orchitis is covered in more detail in [CHAPTER 103](#). Consider chlamydia and gonorrhoea in all sexually active men, especially men aged <35 years.

Vaginal discharge

Vaginal discharge is presented in more detail in [CHAPTER 98](#). The most common cause of vaginal discharge in women of reproductive age is normal physiological discharge. It should be noted that vaginal thrush and bacterial vaginosis are not considered STIs, but can be associated with sex. The pathogens to consider are:

- *Candida albicans* → vaginal thrush
- *Gardnerella vaginalis* (and others) → bacterial vaginosis
- *Chlamydia trachomatis*
- *Neisseria gonorrhoeae*

- *Mycoplasma genitalium*
- *Trichomonas vaginalis* (more common in Aboriginal and Torres Strait Islander women, older women and women living in rural and remote areas)

Herpes simplex virus may cause vaginal discharge if HSV cervicitis is present.

Cervicitis

Cervicitis is often a forerunner to PID. The likely organisms are *C. trachomatis* or *N. gonorrhoeae*. Other causes include *M. genitalium*, *T. vaginalis* and HSV. If there is cervicitis only (mucopus at the cervix without uterine pain or tenderness), treat with doxycycline (o) 500 mg bd for 7 days.

Pelvic inflammatory disease¹

PID is covered in more detail in [CHAPTER 95](#). It is not always an STI. Often multiple pathogens are involved in the infection and 70% of cases have an unidentified cause.

Common pathogens are *N. gonorrhoeae*, *C. trachomatis* and *M. genitalium*. Swabs from the cervical os frequently underestimate the organisms involved and thus treatment needs to be directed to all possible pathogens.

Specimen collection

- Endocervical swabs for NAAT and culture for *N. gonorrhoeae*
- NAAT for *C. trachomatis* and *M. genitalium*

Treatment

Therapy for PID is deliberately vigorous because the major aim is to prevent infertility and the consequent need for assisted reproductive treatment (ART) in the long term. The detailed treatment is outlined in [CHAPTER 95](#).

Summary

Mild to moderate infection:

ceftriaxone 500 mg IM (in 2 mL of 1% lignocaine) or IV (as single dose)

plus

metronidazole 400 mg bd for 14 days

plus

doxycycline 100 mg bd for 14 days

Severe PID: hospitalise for IV therapy.

§ Anogenital ulcers

Most genital ulcers are herpes—any small genital ulcer that is superficially ulcerated, scabbed, red-edged, multiple and painful is likely to be herpes. Consider herpes zoster and syphilis if unilateral genital ulcers are present.

STI causes of anogenital ulcers include:

- Herpes simplex virus (HSV 1, HSV 2)
- *Treponema pallidum* (primary chancre)
- *Haemophilus ducreyi* (chancroid)
- *Klebsiella granulomatis* (donovanosis)

Genital ulcers due to primary syphilis and donovanosis are often painless. Chancroid and donovanosis are rare, almost always imported infections and require specialist input if suspected.

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§ Genital herpes¹

The incubation period varies from 2–12 days. A microbiological diagnosis is recommended as clinical diagnosis can be unreliable.

HSV 1 is the typical cause of oral herpes (cold sores) and is now the cause of more than 50% of genital herpes cases. HSV 2 is more likely to cause recurrent genital herpes than HSV 1.⁷ Studies suggest that about 12% of Australian adults are infected with HSV2 and 76% with HSV1.⁸ The majority of patients remain undiagnosed, with mild or asymptomatic recurrences. Once infected with HSV, the virus achieves latency in the nerve roots and is a lifelong infection, although recurrences become infrequent over time.

Symptoms

With the first attack there is a tingling or burning feeling in the genital area. A crop of small vesicles then appear; these burst after 24 hours to leave small red painful ulcers. The ulcers form scabs and heal after a few days. The glands in the groin may become swollen and tender, and the patient might feel unwell with myalgia and headache.

The first attack lasts about 5–10 days.

Males

The virus usually affects the shaft of the penis, but can involve the glans and coronal sulcus, and the anus (see FIG. 109.3). Other presenting symptoms include painful splitting of the skin,

erythema with tingling/itch, urethritis and proctitis.

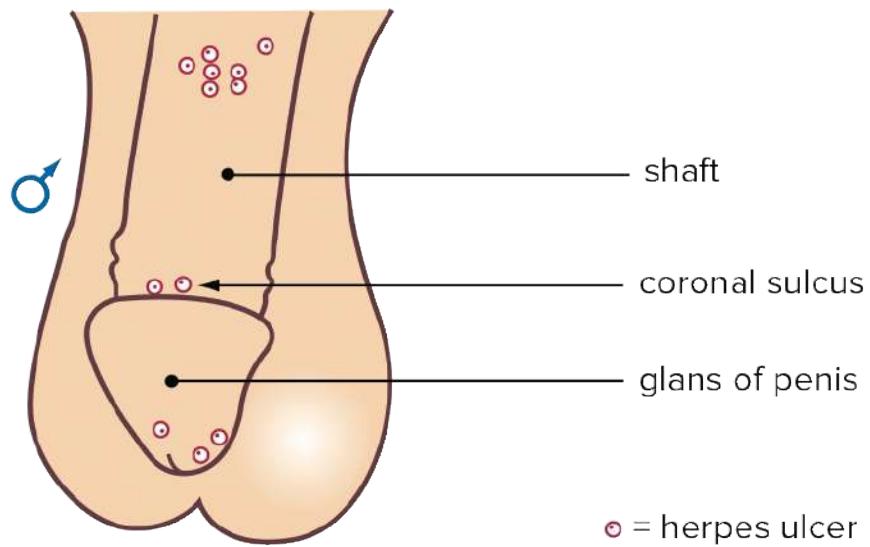


FIGURE 109.3 Usual sites of vesicles/ulcers in males

Females

Vesicles develop around the opening of and just inside the vagina, and can involve the cervix and anus (see FIG. 109.4). Passing urine might be difficult. The cervix may be the only site of lesions and these cases may be asymptomatic or present with symptoms of cervicitis including vaginal discharge.

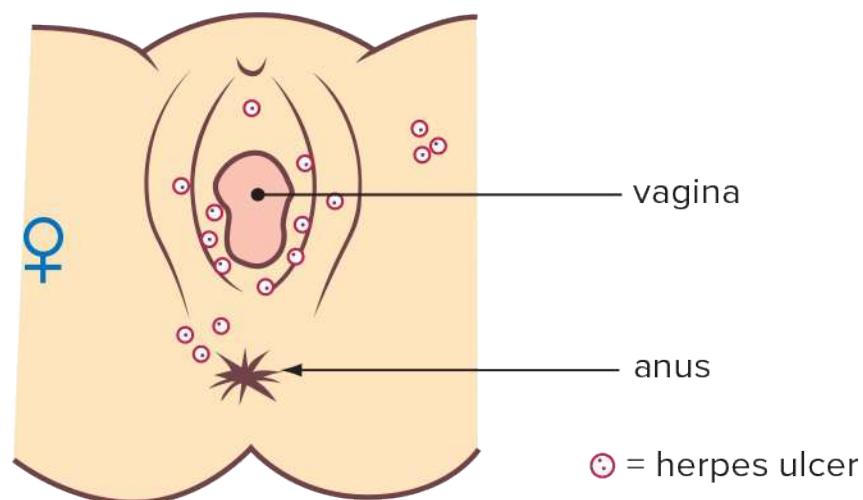


FIGURE 109.4 Usual sites of vesicles/ulcers in females

In both sexes, it can affect the buttocks and thighs. A serious but uncommon complication, especially in females, is the inability to pass urine.

Specimen collection

Take a swab from a deroofed vesicle for NAAT testing. Serological tests for HSV are not recommended.

Transmission⁴

HSV can be caught by direct contact through vaginal, anal or oral sex. It can appear spontaneously in people in stable relationships or years after cessation of sexual relationships. 50% of first presentations are not true primary infections.

Most HSV transmissions occur within the first few months of a relationship with asymptomatic viral shredding as the main mechanism. Combined condom use and antiviral therapy reduces the risk of transmission.

Recurrence

HSV 2 is more likely to cause recurrent genital herpes than HSV 1. Recurrences of HSV 2 may produce prodromal symptoms prior to an outbreak, including burning, tingling or neuralgia. Fortunately, episodes become milder and less frequent over time and many will stop eventually. Prolonged stress is a common trigger for frequent recurrences.

Treatment (antimicrobial therapy)

Topical treatment³

Pain relief can be provided in some patients with topical lignocaine 2% gel but caution is needed since it may cause sensitisation with prolonged use.

Oral treatment—first episode

For the first episode of primary genital herpes:

valaciclovir 500 mg (o) bd for 5–10 days

or

aciclovir 200 mg 8 hourly for 5–10 days

Episodic genital herpes (within 24 hours)

valaciclovir 500 mg (o) bd for 3 days

or

famciclovir 250 mg (o) 4 tablets statim, repeat in 12 hours

Suppressive treatment

Frequent recurrences (six or more attacks annually) may benefit from continuous therapy for 6 months (e.g. valaciclovir 500 mg (o) once daily). Interrupt at 6 months to evaluate.

Supportive treatment (advice to the patient)

- Rest and relax as much as possible. Warm salt baths can be soothing.
- Icepacks or hot compresses can help.
- Painkillers such as paracetamol or ibuprofen may give relief.
- If urination is painful, pass urine under water in a warm bath or in the shower.
- Wear loose clothing and cotton underwear.

Counselling

‘A chat beats medicine for herpes’. Since genital herpes is distressing and recurrent, patients are prone to feel stressed and depressed, and can be assisted by appropriate counselling and support. Sexual abstinence should be practised while lesions are active.

Syphilis

In Australia, syphilis, which has re-emerged, usually presents either as a primary lesion, a rash or through chance finding on positive serology testing (latent syphilis).

It is important to test during pregnancy, especially in Aboriginal and/or Torres Strait Islander people. Test at the first antenatal visit and repeat in the third trimester. Testing at additional timepoints is recommended in areas affected by an ongoing syphilis outbreak.

It is important to be alert to the various manifestations of secondary syphilis (refer to [CHAPTER 114](#)). The classification and clinical features of syphilis are presented in [TABLE 109.4](#) (see also [CHAPTER 19](#)).

Table 109.4 Classification and clinical features of syphilis

Type	Time period	Infectivity	Clinical features
Acquired			
Early (within first 2 years of infection)			
• Primary	10–90 days, average 21	Infectious	Hard chancre Painless Regional lymphadenopathy
• Secondary	2–24 weeks after chancre (average 6)	Infectious	Coarse non-itchy maculopapular rash (usually trunk, palms and soles) Constitutional symptoms (may be mild) Condylomata lata Mucous membrane lesions Visual symptoms (uveitis)
• Early latent	Months to 2 years	Infectious	No clinical features but positive serology
Late (after the second year of infection)			
• Late latent	2 years plus	Non-infectious	Risk to unborn fetus
• Tertiary (now rare)		Non-infectious	Late benign: gummas or Cardiovascular or Neurosyphilis
Congenital			
Early	Within first 2 years of life	Infectious	Stillbirth or failure to thrive Nasal infection: 'snuffles' Skin and mucous membrane lesions
Late	After second year of life	Non-infectious	Stigmata (e.g. Hutchinson teeth) Eye disease

Transmission

- Sexual intercourse (usual common mode)
- Transplacental to fetus
- Direct contact with open lesions (e.g. oral)

Management

The management of syphilis has become quite complex and referral of the patient to a specialist facility for diagnosis, treatment and follow-up is recommended.

Recommended antimicrobial therapy

Early syphilis (primary, secondary or latent) of not more than two years' duration:^{1,7}

benzathine penicillin 1.8 g IM as single dose

or

procaine penicillin 1.5 g IM daily for 10 days

For patients hypersensitive to penicillin:

doxycycline 100 mg (o) 12 hourly for 14 days⁷

Note:

- sex should be avoided until ulcers are healed
- sexual contacts in the past 3 months should have treatment
- repeat serology at 3 months and then 3 monthly

Late latent syphilis: more than 2 years or indeterminate duration:

benzathine penicillin 1.8 g IM once weekly for 3 doses

or

procaine penicillin daily for 15 days

For secondary syphilis, sexual contacts in the past 6 months should have treatment. Neurosyphilis and cardiovascular and congenital syphilis are also treated with penicillin but require special regimens.

Anogenital lumps

Common pathogens:

- *Human papillomavirus* (HPV 6 and 11 account for 90%, although decreased since the introduction of the HPV vaccine)
- *Molluscum contagiosum* (pox) virus

Uncommon:

- *Treponema pallidum*—condylomata lata

Physiological:

- Fordyce cysts, which are enlarged ectopic sebaceous glands in the mucosa, are a differential diagnosis of a genital lump

Others:

- fixed drug eruptions, aphthous ulcers, trauma, carcinoma, Crohn disease
- be aware of increased risk of HPV-related anorectal cancers in MSM

Diagnosis

Warts and *Molluscum contagiosum* have a distinctive appearance and are readily diagnosed by inspection (see FIG. 109.5). Removal for diagnosis is usually not required. Condylomata lata are multiple lesions that resemble warts superficially but are covered by abundant exudate. They occur in secondary syphilis.

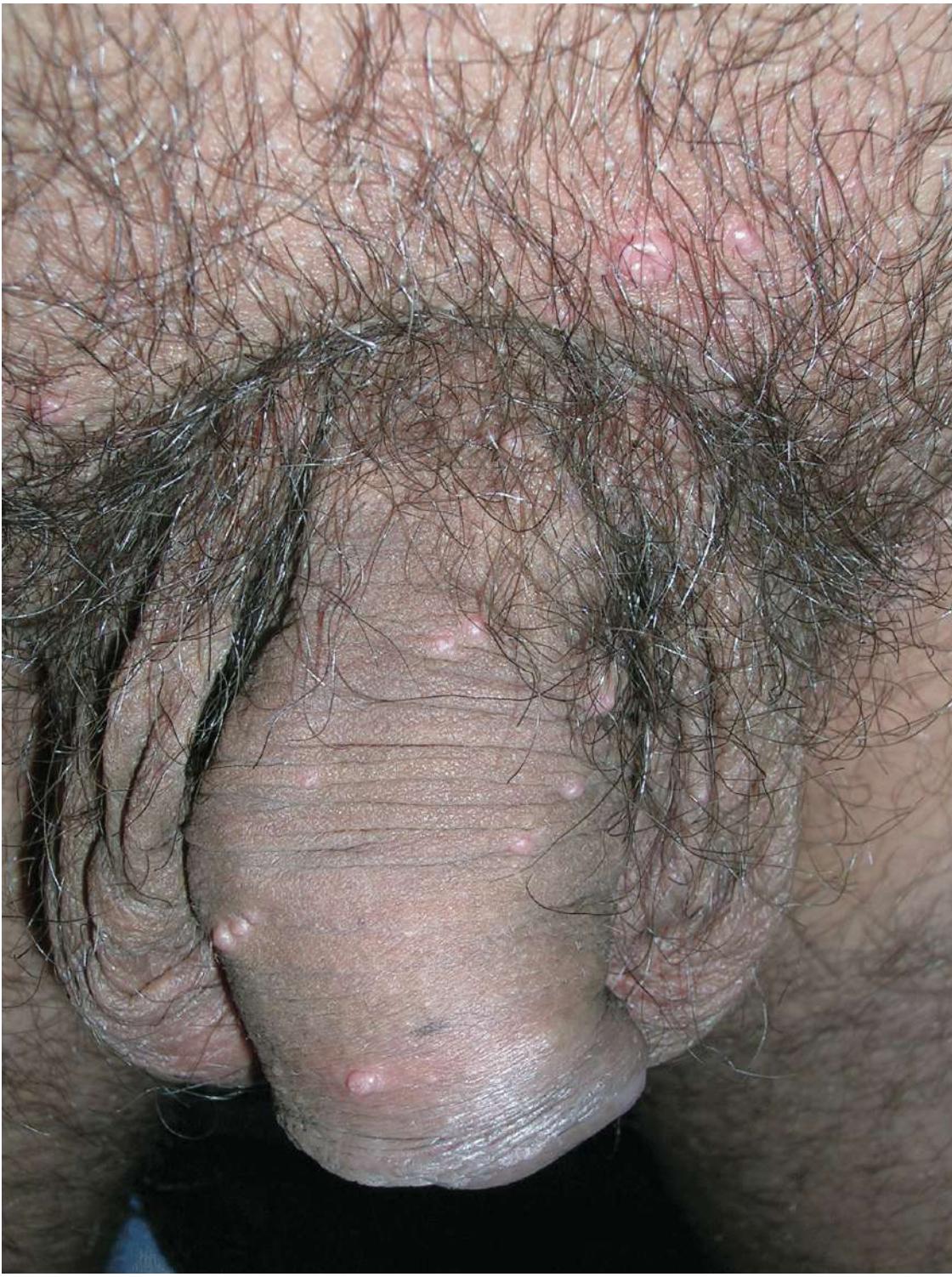


FIGURE 109.5 *Molluscum contagiosum* on and around the penis. They were on the buttocks of his female partner.

Treatment of warts

Warts may be removed by chemical or physical means, or by surgery. Treatment is cosmetic rather than curative and needs to be individualised. For small numbers of readily accessible warts, the simplest treatment is:⁷

cryotherapy weekly until resolved

or

podophyllotoxin 0.5% paint or 0.15% cream:

apply bd with plastic applicator for 3 days

repeat in 4 days and then weekly for 4–6 cycles if necessary

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(Note: Paint is more suited for use on external keratinised skin. Cream is best used in perianal area, introital area and under the foreskin.¹)

or

topical imiquimod 5% cream applied to each wart by the patient 3 times a week at bedtime (wash off after 6–10 hours) until the warts disappear (usually 8–16 weeks)

If warts are in the pubic region, avoid shaving or waxing as this may facilitate local spread by autoinoculation of HPV into areas of microtrauma.

Treatment of *Molluscum contagiosum*³

These lesions often resolve spontaneously in immunocompetent patients. There are many treatment choices to provoke resolution. These include:

- cryotherapy with liquid nitrogen (for a few seconds)—can be repeated after several weeks
- podophyllotoxin 0.5% paint twice daily 3 days per week for 4 weeks

Cryotherapy is usually the treatment of choice. If lesions are widespread or severe, refer for expert advice. Other destructive methods such as piercing with a needle, application of phenol or diathermy are seldom performed due to issues of pain and potential scarring.

⌚ Genital itch

Common pathogens:

- *Sarcoptes scabiei* (scabies)
- *Phthirus pubis* (pubic lice)
- *C. albicans* (vulvovaginitis)

C. albicans is not considered an STI but can be associated with sex. Other non-STI itchy rashes on genitals include dermatitis and psoriasis.

Diagnosis

Scabies: inspection on scraping and microscopy. Scabies is diagnosed by a very itchy, lumpy rash. It is rare to find the tiny mites, but it may be possible to find them in the burrows, which look like small wavy lines.

Pubic lice: inspection for moving lice and nits (eggs) on hair shaft.

C. albicans: swab for *Candida* culture.

Treatment

Scabies⁹

permethrin 5% cream if >6 months of age. Apply to whole body from jawline down (include every flexure and area), leave overnight, then wash off. Wash clothing and linen after treatment and hang in sun. Repeat treatment in 7 days.

or

benzyl benzoate 25% emulsion left for 24 hours before washing off. Repeat after 7 days.

Wash clothing and linen after treatment (preferably on a hot cycle) and hang in sun or dry in hot clothes dryer. Repeat treatment in 7 days. The whole family and close contacts must be treated, regardless of symptoms, which can take weeks to develop. Treatment of children younger than 6 months is covered in [CHAPTER 112](#).

Note: Persistence of the itch after treatment is common, which can take 3 weeks or more to resolve. Also prescribe a moderately potent topical corticosteroid ± an oral antihistamine for the itch.

Pubic lice

permethrin 1% lotion: apply to pubic hair and surrounding area, leave for a minimum of 10 minutes and then wash off

or

pyrethrins 0.165% + piperonyl butoxide 1.65%, apply as above⁹

Shaving pubic hair is also effective. Bed clothes and underwear should be washed normally in hot water after treatment. Repeat the treatment after 7 days. Sometimes a third treatment is necessary. Sexual contacts and the family must be treated (young children can be infested from heavily infested parents). Where the lice or nits are attached to eyelashes, insecticides should not

be used: apply white soft paraffin (e.g. Vaseline) liberally to the lashes bd for 8 days. Then remove the nits with forceps.

Extragenital STIs

Viral hepatitis

Sexual activity is a factor in the transmission of hepatitis B (in particular), hepatitis A (where faecal–oral contact is involved), hepatitis C (rare and mostly in MSM, particularly with HIV) and hepatitis D (rare, in people with hepatitis B only).

Hepatitis A vaccination is recommended for men who have sex with men and people who inject drugs.⁶

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Hepatitis B

In Western societies, sexual transmission of HBV is a common mode of spread and there is a higher prevalence in men who have sex with men (MSM), inmates in correctional facilities and injecting drug users. It is also prevalent among Aboriginal and Torres Strait Islander people living in remote areas and among people from culturally and linguistically diverse populations.

Transmission can be via:

- parenteral contact including intravenous needle sharing and non-sterile tattoo equipment
- horizontal spread via exposure to blood and bodily fluids, including semen and vaginal secretions
- vertical from mother to child (usually intrapartum or perinatal)

Even though studies have shown minute quantities of the virus can be present in saliva, tears and breast milk, they are not considered to be in high enough levels to transmit the virus.

There is no specific therapy for hepatitis B, so prevention through vaccination is important. Antiviral and immunomodulatory drugs, including entecavir, tenofovir or peginterferon alfa-2a, can be used to prevent progression to liver failure and hepatocellular carcinoma.¹⁰ See CHAPTER 47 .

Immunisation

Hepatitis B immunisation is provided to all Australian children and most people born from the 1990s should have received immunisation. It should be encouraged in hepatitis B marker-free people at risk of acquiring this infection. At-risk groups include Aboriginal and Torres Strait Islander people, MSM, people who inject drugs, sex workers and close contacts of anyone with hepatitis B.

Hepatitis C

Sexual transmission of hepatitis C is considered rare but can occur in men who have sex with men, especially men with HIV. Over 90% of newly acquired hepatitis C infections in Australia are attributable to injecting drug use.¹¹

HIV infection

Infection with HIV causes chronic immune deficiency which, if untreated, leads to acquired immunodeficiency syndrome (AIDS) after an average period of 10 years after infection.

Male-to-male sex continues to be the major HIV risk exposure in Australia, reported for 68% of HIV diagnoses in 2015, with heterosexual sex reported for 20%, both male-to-male sex and injecting drug use for 5%, and injecting drug use for 3%.¹²

HIV infection is considered in more detail in [CHAPTER 18](#).

Pre-exposure prophylaxis (PrEP) and postexposure prophylaxis (PEP)

Daily use of coformulated tenofovir and emtricitabine for HIV pre-exposure prophylaxis (PrEP) by populations at high risk of HIV infection is now recommended through the 2015 WHO guidelines.¹³

Postexposure prophylaxis may be indicated when there is exposure to a known or potential HIV source. Antiretroviral treatment can be taken within 72 hours of exposure to reduce the chance of infection. Consider specialist advice, as every presentation for PEP should be assessed on a case-by-case basis.

When to refer

- Non-gonococcal urethritis:
 - if symptoms do not resolve with treatment
- Gonorrhoea:
 - if complications or symptoms do not resolve with treatment
- Syphilis:
 - early referral or discussion with a sexual health specialist/service is strongly recommended, especially in pregnancy
- HIV:
 - experience in prescribing antiretroviral treatment required

- Genital warts:
 - urethral, cervical warts
 - refractory warts

Contact tracing⁵

Contact tracing is the responsibility of the infected individual but the health care provider also has a responsibility to initiate the process. The person infected with an STI should be advised to inform partners that they may have been exposed and should seek testing and treatment. All current partners should be treated simultaneously.

Government guidelines on contact tracing can be found at www.contacttracing.ashm.org.au, and include how far back to trace, which varies between conditions. In the case of a positive chlamydia test, it is recommended to notify partners from the previous 6 months. Assistance from the local sexual health service is recommended for HIV and syphilis because it leads to more contacts being tested and treated.

There are several helpful websites, including www.letthemknow.org.au, which assist with sending anonymous emails or text messages to contacts.

Patient-delivered partner therapy, which is when the treating clinician provides another prescription for the current partner without a consultation, remains controversial. It should be restricted to times when other means of contact tracing are likely to fail. Clinicians are advised to check with their local health department for advice on the current legislation.

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Table 109.5 STIs: twelve golden rules of management (Sexual Health Society of Victoria)

- 1 An STI can only be diagnosed if the possibility is considered.
- 2 An adequate sexual history is paramount.
- 3 A proper history and careful examination must precede laboratory investigations.
- 4 Remember the sexual partner(s)!
- 5 Treatment consists of the appropriate antibiotic in correct dosage for an adequate period of time.
- 6 A patient concerned about STIs is probably an at-risk patient.
- 7 Counselling and education are fundamental to STI management.
- 8 Penicillin will not cure NGU.

- 9 Not all vaginal discharges are thrush.
 - 10 Multiple, painful genital ulcers are most often due to herpes simplex.
 - 11 Prompt, accurate treatment of PID is necessary to preserve fertility.
 - 12 Remember the three Cs—**Consent, Confidentiality and Counselling**—of HIV antibody testing.
-

Good communication

Note: Tests for STIs, including the HIV antibody test, should only be performed with the patient's knowledge and consent, and after adequate counselling. An appointment should be made to give results in person, irrespective of the results.

Patient education resources

Hand-out sheets from *Murtagh's Patient Education* 8th edition:

- Chlamydial urethritis
- Gonorrhoea
- Hepatitis B
- Herpes: genital herpes
- HIV infection and AIDS
- HIV postexposure prophylaxis
- Lice: pubic lice
- Pelvic inflammatory disease
- Warts: genital warts

Resources

Australian STI Management Guidelines for use in primary care.

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110 Intimate partner violence and sexual assault

I want to tell people that family violence happens to [anybody], no matter how nice your house is, no matter how intelligent you are.

ROSIE BATTY, 2014

Intimate partner violence (IPV) is defined by the World Health Organization as ‘any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in the relationship’. Domestic violence emphasises the setting of the violence, whereas family violence is a broader term that includes any violence or abuse that occurs in a family, e.g. elder abuse and adolescent violence against parents.¹

There is a strong gender bias in IPV. We describe the gender bias in other conditions like rheumatoid arthritis where the majority of people affected are women. In IPV, it is mainly women and children who are subjected to IPV, and it is mainly men who perpetrate IPV. Of course, not all men are violent, and some women can be violent too. However, it is important to be aware of this strong gender bias. IPV occurs in both heterosexual and same sex relationships. Due to space limitations, this chapter will focus on IPV in heterosexual relationships perpetrated by men against women and children.

IPV is the most common form of violence against women. The most common form of violence against men is perpetrated by other men, usually by strangers.

GPs often say we do not see many women that have experienced IPV. However, it has been estimated that full-time GPs are seeing up to five women per week who have experienced some form of IPV in the past 12 months.²

A major problem in dealing with IPV is that it is hidden and women are reluctant to disclose IPV when visiting medical practitioners. Another complicating factor is the fact that many women experiencing IPV may not even be aware that this is the case. Women who have been subjected to IPV stress the importance of a trusting doctor–patient relationship, including confidentiality and a non-judgmental attitude.

We usually think of IPV in terms of physical violence but it can take many forms.³ These

include:

- acts of physical violence, such as slapping, hitting, kicking and beating
- sexual violence, including forced sexual intercourse and other forms of sexual coercion
- emotional (psychological) abuse, such as insults, belittling, constant humiliation, intimidation (e.g. destroying things), threats of harm, threats to take away children
- controlling behaviours, including isolating a person from family and friends; monitoring their movements; and restricting access to financial resources, employment, education or medical care

Key facts and checkpoints⁴

- In Australia, 1 in 4 women are subjected to IPV or emotional abuse by an intimate partner at some time.
- Women are nearly three times more likely to have experienced IPV than men.
- Of the women who are subjected to IPV, approximately a quarter are pregnant at the time and more than half have children in their care.⁵
- Pregnancy is a high-risk time for IPV.
- IPV is the greatest health risk factor for women aged 25–44.
- In Australia, 8 women per day are hospitalised due to IPV and one woman per week is murdered by her current or former partner.
- Alcohol is a factor in 45% of IPV incidents (i.e. neither the sole cause, nor an excuse).⁶
- Leaving is the greatest time of risk—approximately two-thirds of women who are murdered by their (ex) partner are murdered around the time of leaving.⁷

Practice tip

Safety is the highest priority when working with women who are subjected to IPV.

Possible presentations⁸

- frequent presentations of non-specific symptoms (e.g. chronic pain, headaches, functional gastrointestinal disorders, sexual dysfunction)
- psychological problems (depression, somatoform disorders, anxiety disorders, panic attacks, PTSD, suicidal ideation)
- insomnia
- eating disorders
- drug and alcohol problems
- physical injuries: usually bruising caused by punching, kicking or biting; also fractures, burns, genital trauma
- pregnancy and childbirth (e.g. unintended pregnancies, forced terminations, miscarriage, poor antenatal care, low birth weight, premature labour)—it is recommended to ask all pregnant women about violence during antenatal care

- bedwetting, sleeping disorders, anxiety, stress, depression, withdrawal
- aggressive behaviour and language
- problems at school
- chronic somatic problems and frequent presentations
- drug and alcohol abuse
- suicidal ideation in adolescence

Diagnosis

Diagnosing the problem, which is usually ‘hidden’, can be a challenge to the GP. It is important to set aside common assumptions about the problem and have a high index of suspicion. If you suspect domestic violence—ASK! The doctor has to take the initiative because patients rarely complain about the violence.⁷ It is also the doctor’s responsibility to ensure the man leaves the room to talk to the woman alone. Possible questions include:

- How are things at home?
- How are things with your partner?
- Do you get scared or frightened of your partner?

- Is there a lot of tension in your relationship?
- Do you feel your views are respected?
- Has your partner ever physically threatened or hurt you?
- Have you ever felt unsafe?

It is advised to universally screen all pregnant women for intimate partner violence.

Practice tip

Screen all pregnant women for intimate partner violence.

Barriers to communication about abuse⁹

- Concerns about confidentiality
- Perceptions about doctors:
 - do not ask directly
 - have no time
 - are not interested
- Embarrassment
- Fear of involving police/courts
- Fear of shaming family
- Fear of partner retaliation

Assessment

- Delineate the problem: pattern of violence; effect on the woman and her children; resources available to women; social/cultural environment.
- Examine and investigate presenting symptoms.
- Check for coexisting injuries (common target areas are breast, chest, abdomen and buttocks); inspect the ears, teeth and jaw.
- Check the patient's general health status.

- Look for signs of alcohol or drug abuse.
- Keep accurate records and consider taking photographs.
- X-rays may show old fractures.

Women who are subjected to violence

Women who have been subjected to violence come from all socioeconomic and cultural groups. As a rule they enter the relationship as normal, independent and intelligent women but gradually lose self-esteem and become increasingly compliant as a coping strategy. Unfortunately, many victims are led to believe that somehow they are at fault.

Groups of women at greater risk include Aboriginal and Torres Strait Islander women, young women, pregnant women, women separating from their partners, women with disability, women experiencing financial hardship and women who witnessed or were subject to violence as children.⁴

Most women simply want the violence to stop rather than leave their relationships. Page 1220
They are usually constrained from leaving due to concerns for their children, feeling they have nowhere to go or financial dependance. Often the reason they stay is fear of retaliation. Women may be at various stages of change in terms of taking action, in accordance with Prochaska and DiClemente's model of change (see [CHAPTER 12](#) , [FIG. 12.4](#)), and the counsellor should be aware of this process.

Men who use violence¹⁰

Men who use violence come from all walks of life and social and ethnic groups. There are often no distinguishing characteristics to identify a man who will be violent towards his partner. Men who use violence tend to minimise responsibility for their use of violence, blame the victim or external factors, and greatly under-report their use of violence.

Perpetrators use abuse and violence to maintain their power and control in a relationship. This is often based on community norms and expectations, along with risk factors including mental disorders, substance abuse, unemployment, poverty and coming from a family where intimate partner abuse occurred.⁸ It is important to note that these risk factors are not causal.

Cycle of violence

A predictable pattern that is referred to as the 'cycle of violence' has been identified in many intimate relationships. It is controlled by the perpetrator, while the victim feels confused and helpless. The cycle repeats itself with a tendency for the violence to increase in severity (see [FIG. 110.1](#)).

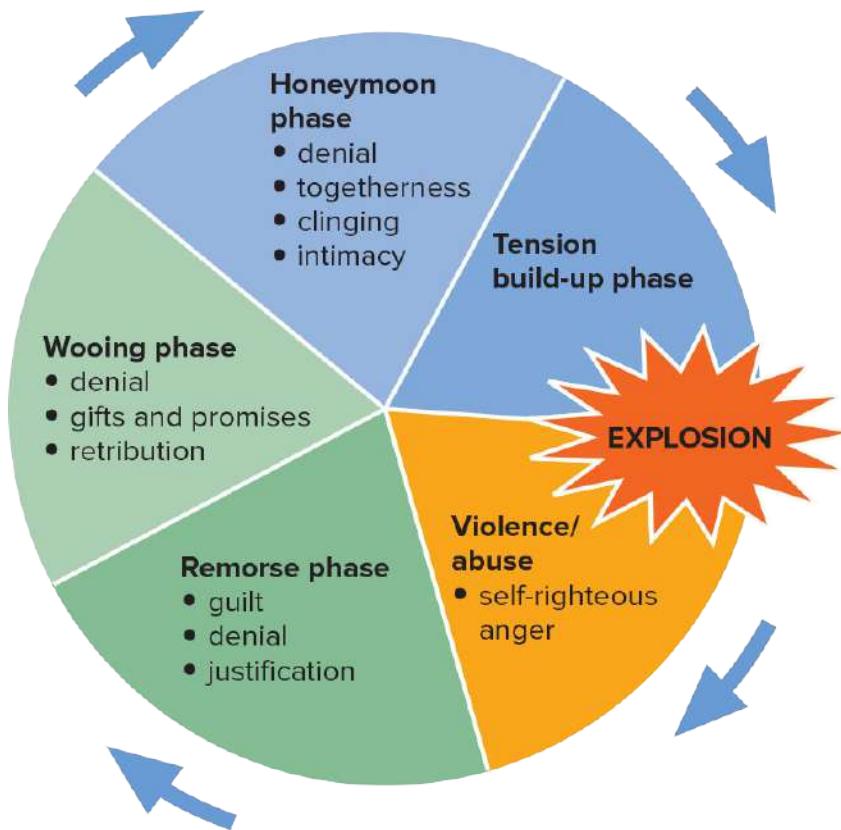


FIGURE 110.1 The cycle of IPV

Management

The key to management is initial recognition of the problem and establishment of empathic caring and support for the woman and family. It must be emphasised that men who use violence (as in most criminal activity) do not readily change their behavioural pattern and thus there is minimal prospect of the violence decreasing unless there is a dramatic reason to change. A management strategy is presented in TABLE 110.1 . The immediate safety of women and any children is always the prime working rule.

Table 110.1 Management strategy for domestic violence

Suspect domestic violence, treat any physical injuries

↓

Establish the diagnosis

↓

Assess safety and initiate safety planning

- ↓
- Establish an empathic, trusting relationship
- ↓
- Build the victim's self-esteem and emphasise coping skills
- ↓
- Make effective use of community resources:
- support services
 - women's support group
 - domestic violence resource centre (in each capital city)
 - social services/police
 - social workers
 - private counsellors and psychologists
-

Useful strategies¹¹

Do:

- talk to the woman alone
- believe her
- validate the decision to disclose
- provide a strong statement that violence is never okay
- reassure her that it is not her fault
- enquire about and express concern for her safety
- give information (i.e. about the course of action available to her, contacts for legal advice)
- acknowledge the complexity of the issue
- respect her right to make her own decisions
- provide follow-up and continued support

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Harmful strategies

Don't:

- deny domestic violence

- minimise the importance of domestic violence
- blame the victim
- treat with tranquillisers
- refer to a psychiatrist
- refer to marriage guidance, but do refer to specialist counsellors
- set explicit criteria/rules (takes away victim's power yet again)

Dealing with perpetrators

It is uncommon to get the cooperation of the perpetrator in the management process. The perpetrator has to admit that they have a problem before effective counselling can begin. If they do seek help they require counselling by a skilled and experienced practitioner, as treatment will be prolonged and complex. In early intervention, the GP's role is to:¹⁰

- briefly assess men
- prepare them to accept a referral to a behaviour change program
- undertake alternative interventions to decrease the risk of violence if a referral is not taken up

Safety⁸

Women may not feel safe to go home and may require urgent crisis referral or an urgent safety plan. When assessing a woman's immediate safety, it is important to take the following into account:

- the woman's own assessment of her safety
- presence of risk factors in the perpetrator, including severity and duration of previous violence, history of arrest and incarceration, drug and alcohol use, access to weapons and unemployment
- your own professional judgment

Where you reasonably believe a patient is in imminent threat of danger, you should seek their consent to report the matter to the police. Children at risk require mandatory reporting to child protection. If a violent incident develops or is imminent, it is important to assist the victim in developing a safety plan. One such plan is:

- Compile a list of emergency numbers.
- Identify family and friends who can provide support.

- Put aside emergency money.
- Pack a bag of clothing, medications and toiletries.
- Organise a safe place to store valuables and important documents.
- Identify a safe place for the woman to go to and how she will get there.
- Ask neighbours to call police if they hear any disturbance.

As a general rule the most effective intervention in arresting the violence is to arrest the violent person.⁷ Consider legal interventions such as intervention orders, protection orders (AVOs) and restraining orders.

Continuing care¹¹

It is important to keep in mind that the woman's ability to change her situation may be very limited. It is also important to:

- assess safety regularly, checking for escalating violence
- provide emotional support
- ensure confidentiality
- build her self-esteem by acknowledging the coping skills she has developed
- empower her to take control of decision-making: ask what she needs, explore options and present services available
- familiarise yourself with referral services and their processes:
 - domestic violence resource centres
 - relationship services
 - legal aid
 - social workers
 - social services/police
 - private counsellors and psychologists
- have information available for her to take if appropriate
- offer assistance in contacting referral services if this would be of help

Sexual assault

According to Australian statistics, since the age of 15 years, 1 in 5 women and 1 in 20 men have been sexually assaulted and/or threatened.⁴ Sexual assault is defined broadly as any unwanted sexual contact that occurs without a person's consent and which makes the victim feel uncomfortable, frightened or threatened. The behaviour can include any activity from sexual harassment through to life-threatening rape.

The majority of perpetrators of sexual assault are known to their victims and a high proportion of perpetrators are current or ex-partners. For this reason, it is important to assess whether the patient is safe to return to their accommodation. Stranger assaults only make up approximately 15% of sexual assault cases.¹²

Survivors of sexual assault should be allowed to accept or decline various assessment or treatment options offered by the practitioner. Many victims do not report sexual assault to police because of fear, humiliation or shame.

Medical practitioners dealing with alleged sexual assault should familiarise themselves [Page 1222](#) with the laws applicable in their state/territory. Self-care for clinicians is also of particular importance when dealing with this distressing problem.

Disclosure of sexual assault

Offer and provide privacy, safety and emotional support. Take the time to explain confidentiality and its limits, so that the patient is aware that the assault will not be discussed with the police or their family without their consent. Believe them, listen to them and be non-judgmental.

Five important things to say:

- I am sorry this happened to you.
- This is a crime—it was not your fault.
- It's good that you have talked to me about this.
- I will do what I can to help you.
- You are safe now (if applicable).

History

Most jurisdictions require that the first person who hears an allegation of sexual assault must give evidence if the complaint comes to trial, so document the exact words used.

If the patient presents following recent sexual assault, the following information will help guide management:^{13,14}

- time and place of assault
- brief description of the assault (i.e. what went where)
- condom use
- details of the assailant
- preceding drug or alcohol use
- violence used and any injuries
- current contraception
- risk assessment for patient and any children
- accommodation issues

When patients disclose sexual assault that took place in the past, it is not necessary or advisable to ask all the details about what happened at the first disclosure. The patient may not be ready to tell you details and doing so may easily take them back to their trauma, leading them to decompensate. Let the patient know that you are ready to listen to more details if or when they are comfortable telling you.¹⁵

Management

A patient may disclose sexual assault immediately or years after the event. Management depends on when the assault occurred.

Recent sexual assault⁸

Management options include:

- forensic examination by a specialist sexual assault service, preferably within 72 hours of the assault—this is still advised if the patient is undecided about reporting the assault
- assessment and treatment of physical injuries
- emergency contraception if indicated
- testing for pregnancy or STIs according to need
- urine or blood drug testing if suspected drug-assisted sexual assault, i.e. when the patient has no memory of events and time or other suspicious circumstances—seek specialist advice
- address safety and supports at home—alternative accommodation may be required
- follow-up—patients may need to return for follow-up at 2 weeks and 3 months following STI

checks

- sexual assault counselling and support groups
- ongoing support and monitoring of symptoms of trauma

STI testing and prophylaxis¹⁶

- Take swabs and/or first-pass urine for chlamydia, gonorrhoea and trichomoniasis (PCR), repeat after 2 weeks
- Collect swabs from the oropharynx or rectum if indicated; consider self-collection of swabs
- Take blood for HIV, syphilis and hepatitis B; repeat at 6 and 12 weeks

STI prophylaxis

- Prophylactic antimicrobial therapy is generally not required
 - If seen within 72 hours, consider prophylaxis for hepatitis B and HIV
 - if hepatitis B non-immune, no history of vaccination or unknown status, consider hepatitis B immunoglobulin (should be given within 72 hours), along with the hepatitis B vaccine (within 14 days)
- consider referral for postexposure prophylaxis (within 72 hours)

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Past sexual assault

The long-term physical and psychological consequences of sexual abuse are many, often somatic or psychological, and can have devastating consequences for the victim. Disclosure to a trusted health professional may be the first step in the healing process. A sensitive response to disclosure can be critical in this process. Offer referral to an experienced therapist or sexual assault specialist counselling service, with access to up-to-date knowledge about relevant reporting and legal processes.¹⁵

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Resources

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Part 10 Problems of the skin

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111 A diagnostic and management approach to skin problems

The skilful doctor knows by observation, the mediocre doctor by interrogation, the ordinary doctor by palpation.

CHANG CHUNG-CHING (c. 170–196 CE)

The diagnosis of skin problems depends on astute clinical skills based on a systematic history and examination and, of course, experience. If the diagnosis is in doubt, it is appropriate to refer the patient to a skilled cooperative consultant, as the referral process is an excellent educational opportunity for the GP. Another opinion from a colleague/s in a group practice is also very educative. At least, cross-referencing the skin lesion with a colour atlas facilitates the learning process.

Terminology of skin lesions

Primary lesions

- *Macule*. Circumscribed area of altered skin colour (Latin for stain) without elevation <1 cm diameter (see FIG. 111.1).
- *Patch*. Macule of >1 cm diameter (see FIG. 111.1).
- *Papule*. Palpable mass on skin surface <1 cm diameter (see FIG. 111.2).
- *Plaque*. A flat-topped palpable mass >1 cm diameter.
- *Nodule*. A circumscribed, solid palpable mass >1 cm diameter (see FIG. 111.2).
- *Wheal*. An area of dermal oedema (can be any size), which is pale and compressible.

- *Angio-oedema*. A diffuse area of oedema extending into subcutaneous tissue.
- *Vesicle*. A fluid-filled blister <0.5 cm in diameter (see FIG. 111.3).
- *Bulla*. A vesicle >0.5 cm diameter (see FIG. 111.3).
- *Pustule*. A visible collection of pus in the skin <1 cm diameter.
- *Abscess*. A localised collection of pus in a cavity >1 cm diameter.
- *Furuncle*. A purulent infected hair follicle; includes:
 - folliculitis (small furuncles)
 - boils (larger furuncles)
- *Carbuncle*. A cluster of boils discharging through several openings.
- *Purpura*. A circumscribed deposit of blood >0.5 cm in diameter. May be palpable or non-palpable.
- *Petechiae*. Purpuric lesions <0.5 cm in diameter.
- *Ecchymosis*. Larger purpuric lesion.
- *Haematoma*. A swelling from gross bleeding.
- *Telangiectasia*. Visible dilatation of small cutaneous blood vessels.
- *Comedo*. A plug of keratin and sebum in a dilated pilosebaceous gland.
- ‘*Blackhead*’. An open comedo.
- ‘*Whitehead*’. A closed comedo.
- *Erythema*. Redness of the skin due to increased vascularity.
- *Milium*. Tiny white cyst containing keratin, from occlusion of pilosebaceous gland.
- *Papilloma*. Warty projection above the skin surface.

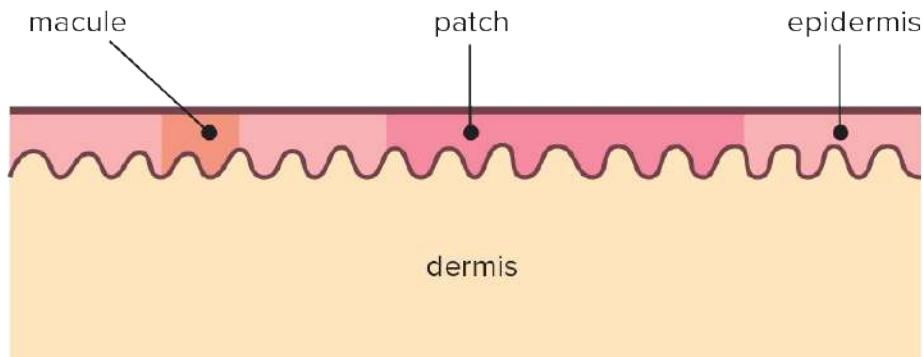


FIGURE 111.1 Macule and patch

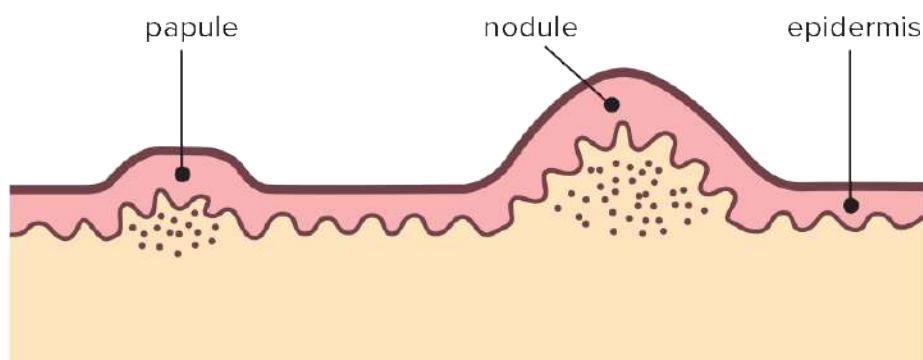


FIGURE 111.2 Papule and nodule

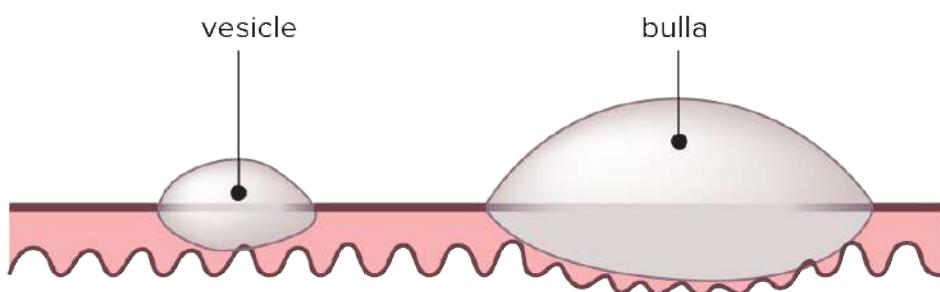


FIGURE 111.3 Vesicle and bulla

Secondary lesions

- *Scales*. An accumulation of excess keratin of the stratum corneum that presents as flaking.
- *Crusts (scabs)*. Superficial dried secretions (serum and exudate).

- *Ulcer*. A circumscribed deep defect with loss of all the epidermis and part or all of the dermis (see FIG. 111.4); they usually heal with scarring.
- *Erosion*. A skin defect with complete or partial loss of the epidermis; they heal without scarring (see FIG. 111.4).
- *Fissure*. A linear split in the epidermis and dermis (see FIG. 111.4).
- *Atrophy*. Thinning or loss of epidermis and/or dermis with loss of normal skin markings.
- *Sclerosis*. Thickening of the dermis with induration of subcutaneous tissue; resembles a scar but may arise spontaneously (e.g. scleroderma).
- *Scar*. A healed dermal lesion where normal structures are replaced by fibrous tissue.
- *Hypertrophic scar*. Rises above the skin surface.
- *Atrophic scar*. Settles below the skin surface.
- *Keloid*. Overgrowth of dense fibrous tissue extending beyond the original wound.
- *Excoriation*. Scratch marks causing an erosion or an ulcer (loss of epidermis).
- *Lichenification*. Thickening secondary to chronic scratching or rubbing (in dermatitis).
- *Callus*. Localised hypertrophy of the stratum corneum.
- *Exfoliation*. Loss of epidermal keratin as large scales or sheets.
- *Keratoderma*. Thickening of skin especially stratum corneum.

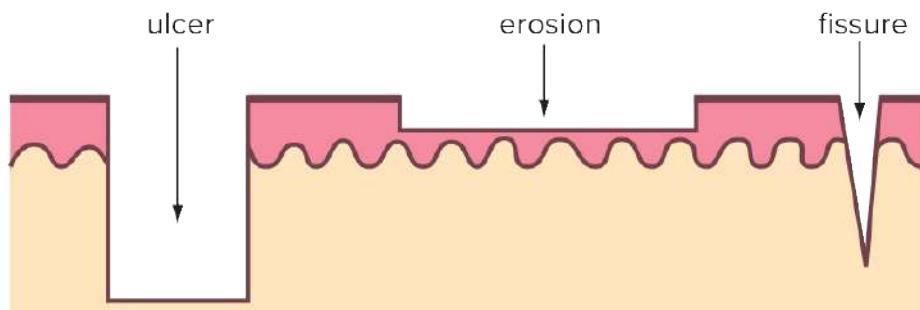


FIGURE 111.4 Ulcer, erosion and fissure

A diagnostic approach

The diagnostic approach of Robin Marks¹ presented here helps to achieve order in the midst of confusion. He describes the importance of simplifying the diagnostic process by being a ‘lumper’

rather than a ‘splitter’. Most common dermatological problems fall into one of seven categories (see TABLE 111.1). A problem that does not fit into one of these seven groups is either an unusual condition or an unusual presentation of a common condition and probably merits a consultant’s opinion.

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Table 111.1 Common dermatological conditions

- Acne
- Psoriasis
- Atopic dermatitis (eczema)
- Urticaria
- Sun-related skin cancer
- Drug-related eruptions
- Infections
 - Bacterial:
 - impetigo
 - Viral:
 - warts
 - herpes simplex, herpes zoster
 - pityriasis rosea
 - exanthemata
 - Fungal:
 - tinea
 - candidiasis
 - pityriasis versicolor
 - Acute and chronic
 - Papular:
 - pediculosis
 - scabies
 - insect bites

Note: TABLES 111.1 to 111.6 were prepared by Professor Robin Marks¹ and are reproduced with his permission.

Glossary of terms

Terms that are continually referred to in skin disease include the following:

Acral	Hands and feet
Intertriginous	In areas of skinfolds
Seborrhoeic	Yellow-brown and waxy
Nummular	Coin-like
Discoid	Disc-like
Annular	Ring-like
Circinate	Circular
Arcuate	Curved
Reticulate	Net-like
Pityriasis (<i>pityron</i> = bran)	Fine, bran-like scaly desquamation or powdery
Guttate	'Dew drop'
Rosea	Rose-coloured
Morbilliform	Like measles
Morphea	Circumscribed scleroderma or skin infiltrate
Livido	Cyanotic discolouration
Lichen	Any papular skin disorder resembling lichens
Verrucous	Rough and warty

History

The three basic questions are:¹

1. Where is the rash and where did it start?
2. How long have you had the rash?
3. Is the rash itchy?

Note: The split into three time zone groups (see TABLE 111.2) is very useful. This question leads on to the next question regarding itch, as the patient is unlikely to tolerate an itchy eruption.

Table 111.2 How long has the rash been present?

Acute (hours–days)	Urticaria
	Atopic dermatitis
	Allergic contact dermatitis

	Insect bites Drugs Herpes simplex/zoster Viral exanthemata
Acute → chronic (days–weeks)	Atopic dermatitis Impetigo Scabies Pediculosis Drugs Pityriasis rosea Psoriasis Tinea <i>Candida</i>
Chronic (weeks–months)	Psoriasis Atopic dermatitis Tinea Pityriasis versicolor Warts Cancers Skin infiltrations (such as granulomata, xanthomata)

If so, is it mild, moderate or severe? The nature of the itch is very helpful diagnostically. A severe itch is one that wakes the patient at night and leads to marked excoriation of the skin, while a mild itch is one that is only slightly upsetting for the patient and may not be noticeable for significant periods during the day.

Three questions the doctor must consider

- 1. Could this be a drug rash?
- 2. Has this rash been modified by treatment?
- 3. Do any contacts have a similar rash?

Further questions for the patient

- Do you have contact with a person with a similar eruption?
- What medicines are you taking or have you taken recently?

- Have you been exposed to anything different recently?
- Do you have a past history of a similar rash or eczema or an allergic tendency (e.g. asthma)?
- Is there a family history of skin problems?

The nature of itching¹

The characteristics of the itch are very useful in dividing up the diagnoses: an eruption that is not itchy is unlikely to be scabies and one that is very itchy is unlikely to be a skin tumour (see TABLE 111.3).

Table 111.3 Is the rash itchy?

Very	Urticaria Atopic dermatitis Scabies, pediculosis Insect bites Chickenpox (adults) Dermatitis herpetiformis Grover disease Stress itching/lichen simplex
Mild to moderate	Tinea Psoriasis Drugs Pityriasis rosea <i>Candida</i>
Often not	Warts, tinea Impetigo, psoriasis Cancers Viral exanthemata Seborrhoeic dermatitis

However, nothing is absolute and variations to the rule will occur—tinea, psoriasis and pityriasis versicolor are sometimes itchy and sometimes not. Chickenpox can vary from being intensely itchy, especially in adults, to virtually no itching.

Relieving or aggravating factors of the itch provide useful diagnostic guidelines; for example, Whitfield's ointment applied to an itchy eruption for a provisional diagnosis of ringworm would

make the itch worse if it were due to eczema.

Examination¹

Examine the skin in good light, preferably natural light, and ensure that any make-up is removed.

There are two basic stages in the physical examination of a rash. The first is an assessment of the characteristics of the individual lesion and the second is the distribution or pattern of the lesions.

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Characteristics of the individual lesion

The single most important discriminating feature is whether it involves the dermis alone or the epidermis as well (see TABLE 111.4). If the lesion involves the epidermis there will be scaling, crusting, weeping, vesiculation or a combination of these (see FIG. 111.5). If the dermis alone is involved, the lesion is by definition a lump, a papule or a nodule (see FIG. 111.6).

Table 111.4 Appearance of individual lesions

Epidermal	Atopic dermatitis Psoriasis Tinea Pityriasis rosea Impetigo, herpes, warts Cancers Scabies Solar keratoses
Dermal	Urticaria Insect bites, pediculosis, scabies Drugs Skin infiltrations Viral exanthemata

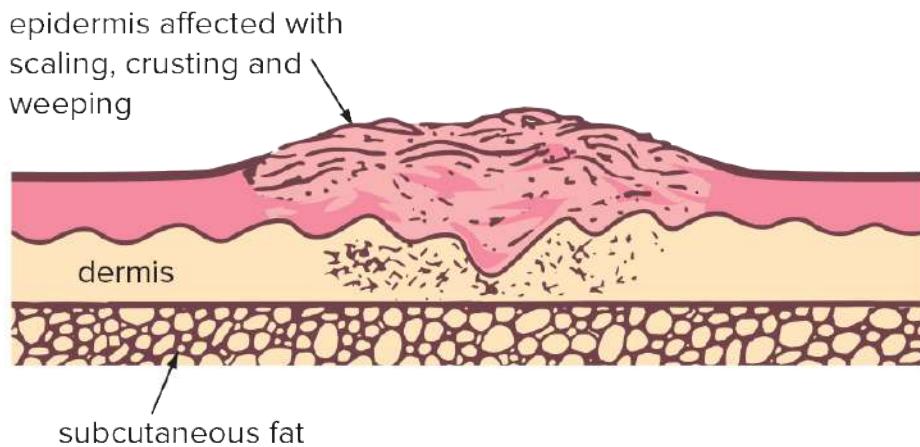


FIGURE 111.5 Epidermal skin lesion

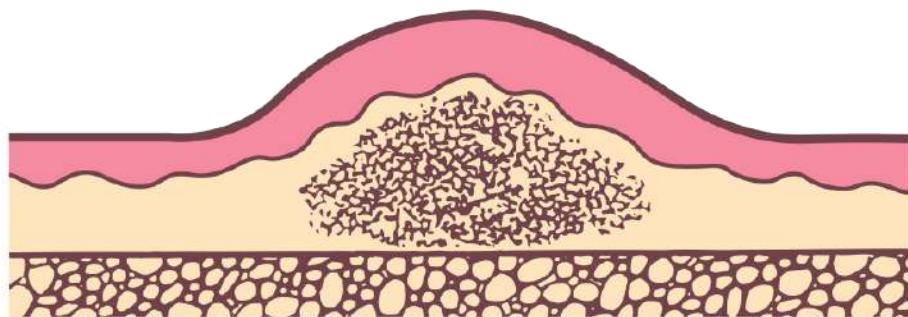


FIGURE 111.6 Dermal skin lesion

Other characteristics of individual lesions that must be sought are the colour, the shape and the size. It is important to feel the skin during the physical examination and to note the consistency of the lesion. Is it firm or soft? The activity of the lesion may also be useful: does it have a clearing centre and an active edge?

Distribution of the lesions

The clinician must decide whether the lesions are localised or widespread. If they are widespread, are they distributed centrally, peripherally, or both? (See TABLE 111.5 .) Diagnosis is often helped when the skin lesions are in a specific area (see TABLE 111.6 and FIGS 111.7 and 111.8). Itchy papules on the penis associated with a widespread pruritus are likely to be scabies. However, care has to be taken because many misdiagnoses are made instinctively on the distribution (e.g. anything in the flexures is dermatitis or anything on the feet is tinea).

Table 111.5 Distribution of the rash

Widespread	Atopic dermatitis Psoriasis Scabies Drugs Urticaria
Central trunk (initially at least)	Pityriasis versicolor Herpes zoster Seborrhoeic dermatitis Guttate psoriasis Pityriasis rosea Viral exanthemata
Peripheral	Atopic dermatitis Herpes zoster Tinea Psoriasis Warts Insect bites

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Table 111.6 Specific areas affected

Face	Rosacea Impetigo Psoriasis Atopic dermatitis Photosensitive (e.g. drugs) Herpes simplex Acne vulgaris Cancers Viral exanthemata
Scalp	Psoriasis Seborrhoeic dermatitis Pediculosis Tinea Atopic dermatitis

Folliculitis

Flexures	Atopic dermatitis Psoriasis Seborrhoeic dermatitis Tinea <i>Candida</i> Pediculosis
Mouth	Aphthous ulcers Herpes simplex <i>Candida</i> Measles
Nails	Psoriasis Tinea Dermatitis
Penis	Scabies Genital herpes and warts <i>Candida</i> Psoriasis

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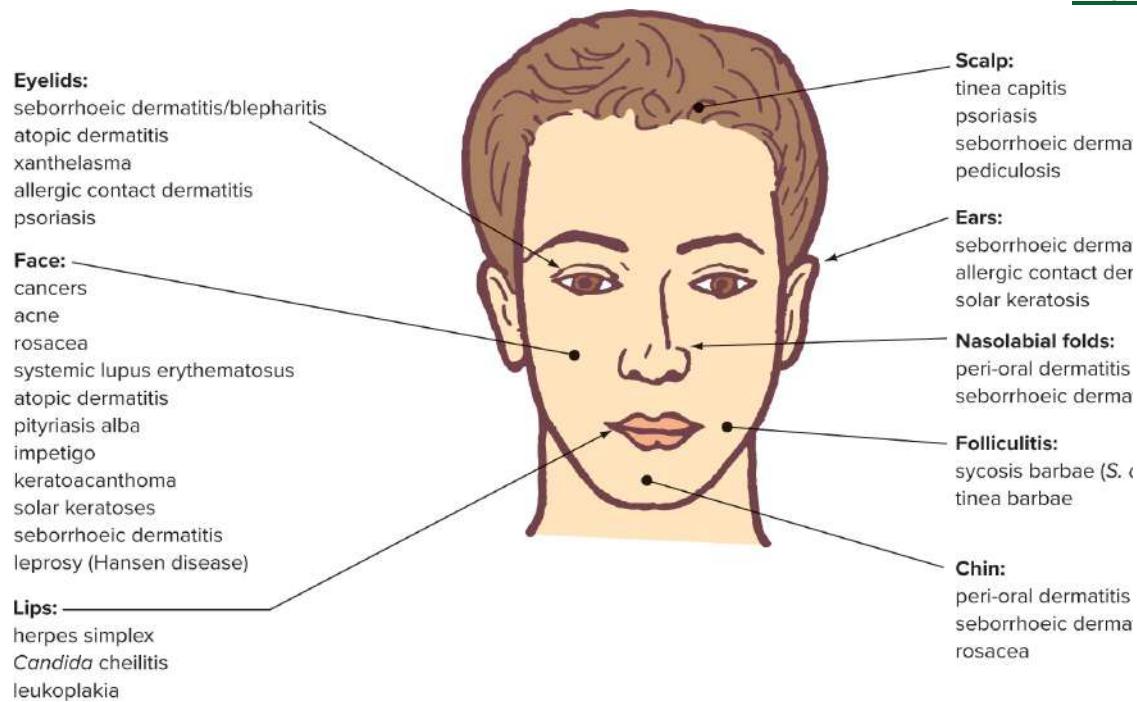


FIGURE 111.7 Typical sites on the face affected by the skin conditions indicated

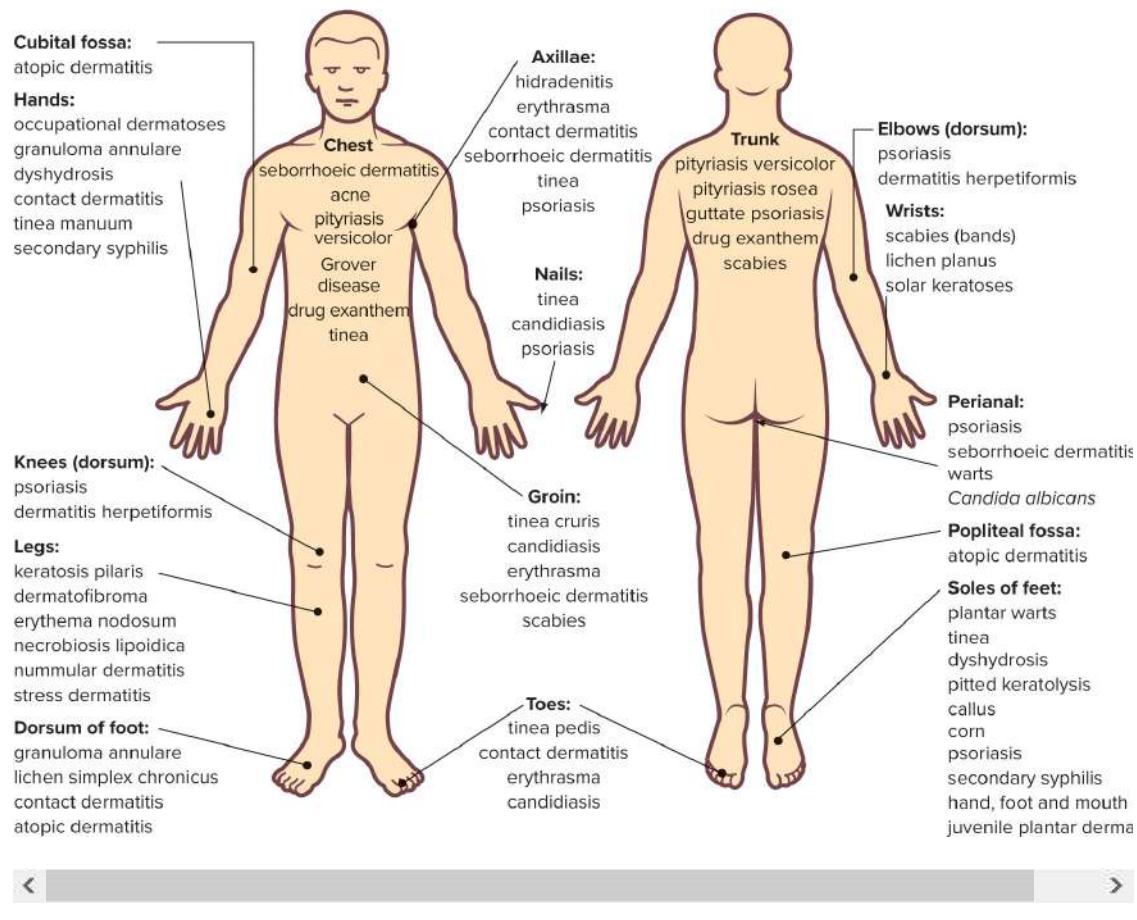


FIGURE 111.8 Typical regional location of various skin conditions

*Same conditions apply to chest and trunk

Another feature of an eruption, which should be sought on examination, is whether the lesions are all at the same stage of evolution.

It is necessary to perform a complete physical examination as well. There is, after all, no such thing as a skin disease but rather disease affecting the skin. The clinician must always bear this in mind when managing patients complaining of a skin eruption. Disease does not affect the skin in isolation and it is unforgivable to look only at the skin and ignore the patient as a whole.

Note: In every case examine the mouth, scalp, nails, hands and feet.

Diagnostic tools

Appropriate diagnostic tools include:

- a magnifying lens
- a diascope, which is a glass slide or clear plastic spoon that is used to blanch vascular lesions in order to determine their true colour
- a ‘Maggylamp’, which is a hand-held fluorescent light with an incorporated magnifier; the device allows shadow-free lighting and magnification
- a dermatoscope, which is very valuable in the diagnosis of pigmented tumours but it does require skill and familiarity to achieve effective use
- Wood’s light
- swabs for culture and NAAT test (PCR)
- skin scrapings or nail clippings for dermatophyte culture
- skin biopsy (even with psoriasis, etc.)

Office tests and diagnostic aids

Wood’s light

Wood’s light examination is an important diagnostic aid for skin problems in general practice. It has other uses, such as examination of the eye after fluorescein staining. (A low-cost, small ultraviolet light unit called ‘the black light’ is also available.)

Method

Simply hold the ultraviolet light unit above the area for investigation in a dark room.

Limitations of Wood’s light in diagnosis

Not all cases of tinea capitis fluoresce because some species that cause the condition do not produce porphyrins as a by-product. See TABLE 111.7 for a list of the skin conditions that do fluoresce. Wood’s light is really only useful for hair-bearing areas.

Table 111.7 Skin conditions that produce fluorescence in Wood’s light

Tinea capitis	Green/bright yellow (in hairs)
Erythrasma	Coral pink
Pityriasis versicolor	Pink–gold
<i>Pseudomonas</i> spp	Yellowish-green

Porphyria cutanea tarda	Red (urine)
-------------------------	-------------

Porphyrins wash off with soap and water, and a negative result may occur in a patient who has shampooed the hair within 20 hours of presentation. Consequently, a negative Wood's light reading may be misleading. The appropriate way of confirming the clinical diagnosis is to send specimens of hair and skin for microscopy and culture.

Skin scrapings for dermatophyte diagnosis

Skin scrapings are an excellent adjunct to diagnosis of fungal infections. Requirements are a scalpel blade, glass slide and cover slip, 20% potassium hydroxide (preferably in dimethyl sulfoxide) and a microscope. Skin scrapings can also be sent for microscopy and culture.

Clinical indications:

1. tinea (superficial dermatophyte infection)
2. pityriasis versicolor
3. *Candida*

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Method

- Scrape skin from the active edge.
- Scoop the scrapings onto the glass microscope slide.
- Cover the sample with a drop of potassium hydroxide.
- Cover this with a cover slip and press down gently.
- Warm the slide and wait at least 5 minutes for 'clearing'.

Microscopic examination

- Examine at first under low power with reduced light.
- When fungal hyphae are located, change to high power.
- Use the fine focus to highlight the hyphae (see FIG. 111.9).

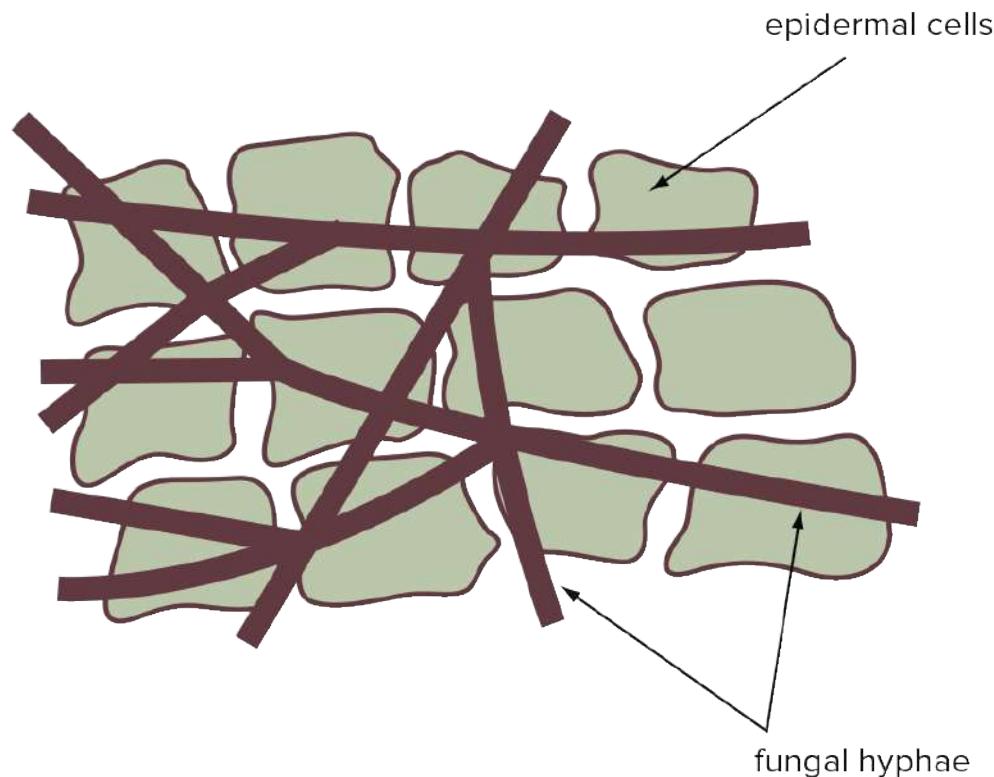


FIGURE 111.9 Diagrammatic representation of microscopic appearance of fungal hyphae

Note: Some practice is necessary to recognise hyphae.

Other uses of microscopy

Detection of the scabies mite: the burrow of the scabies mite is found (can be difficult!) and the epidermis is decisively scraped with a no. 15 scalpel blade, and transferred to a slide after adding a drop of liquid paraffin. The mite is very distinctive.

Dermoscopy

This technique permits clinicians to evaluate sub-surface structures within the skin. Most of the light shining on the skin is scattered at the air–skin interface, but the dermatoscope—which consists of a 10x magnification lens—allows one to see into the deeper areas. This is due to a transilluminating polarised and non-polarised light source, which diminishes surface glare.² Ideally, GPs should undertake courses to acquire this valuable skill, used mainly to evaluate pigmented lesions and distinguish between benign and malignant tumours.

Patch testing

Patch testing is used to determine allergens in allergic contact dermatitis. Read at 48 and 96 hours.

Biopsies

Shave or punch biopsies can be useful (see FIGS 116.27 and 116.28 in CHAPTER 116).

Hair³

Send hair samples for microscopy and root analysis. There are two main tests:

1. the hair pull test (refer to CHAPTER 118)
2. the hair pluck test

In the hair pluck test (used for tinea capitis and hair shaft disorder), a tuft of about 20 hairs is drawn out, forceps applied close to the skin of the scalp and rotated slightly prior to sharp extraction. The hair should be collected on a glass slide for counting and analysis.

Selection of corticosteroid preparations

- Ointment formulations are generally more potent than creams. This is because the occlusive nature of an ointment enhances absorption of the corticosteroid.
- Creams contain more preservatives and excipients than ointments, and so are more likely to cause hypersensitivity or irritation.
- Ointments are generally recommended over creams due to their emollient effect and increased potency.
- A cream base may be used for an acute weeping rash.
- Use a gel or lotion for hair-bearing areas.
- Stubborn dermatoses may benefit from occlusion, such as plastic wrap, occlusive dressings or gloves, applied overnight with appropriate securing in place.
- Choose a potency of corticosteroid appropriate to the site of the rash.
- The greatest absorption occurs through thin skin of eyelids, genitals and skin creases, where a mild corticosteroid should be used.
- The least absorption occurs through the thick skin of palms and soles, where a potent corticosteroid should be used.
- Use a moderately potent corticosteroid on the rest of the limbs and trunk.

- For *Candida* infection (e.g. secondary infection of irritant napkin dermatitis), mix 1% hydrocortisone in equal quantities with an antifungal preparation such as nystatin.

Glossary of topical skin preparation terms

Antipruritic agent One that relieves itching. Examples are:

- menthol (0.25%)
- phenol (0.5%)
- coal tar solution (2–10%)
- camphor (1 or 2%)

Base or vehicle A mixture of powders, water and greases (usually obtained from petroleum). The relative blending of these compounds determines the nature of the base (e.g. lotion, cream, ointment, gel or paste).

Cream A suspension of a powder in an emulsion of oil and water with the addition of an emulsifying agent. Usually applied to normal or moist skin.

Emollient A topical preparation of emulsified oils and fatty acids that is softening or soothing to the skin. It replaces natural oils in the stratum corneum. It also acts as a skin moisturiser and is therefore used on dry skin or dermatoses related to dry skin (e.g. atopic dermatitis). Examples are:

- emulsifying ointment
- sorbolene cream
- aqueous cream

Emulsion A mixture of two immiscible liquids, one being dispersed throughout the other in small droplets.

Gel A viscous substance with a greaseless, water-miscible base.

Humectant A chemical-containing agent that attracts and retains water due to its hygroscopic or osmotic properties. Examples are:

- urea 10% cream
- glycerol 10% cream

Keratolytic An agent that softens or breaks up keratin. Examples are:

- urea 10%—for xerosis or keratosis pilaris
- urea 20%—cracked palms and soles
- salicylic acid 2–10%
- alpha-hydroxy acids (e.g. lactic acid, propylene glycol)

Lotion A suspension of an insoluble powder in water. Modern lotions use an emulsifying agent, which eliminates the need to shake the lotion. An example is calamine lotion (zinc oxide 5, calamine 15, glycerine 5, water to 100).

Moisturiser An agent that increases the water content of the stratum corneum and reduces itching. Classified as:

- emollient
- humectant and
- occlusive (e.g. white soft paraffin: Vaseline)

Ointment A suspension of a substance in an oily vehicle. Generally used for dry scaly skin.

Paint and tincture A rapidly drying liquid preparation that is very useful for intertriginous areas, especially between the toes and in the natal cleft. ‘Tincture’ is the preparation when alcohol is the vehicle. Example: podophyllin in tinct. benz. co. (for genital warts).

Paste Similar to ointment in composition but is more viscous. A paste consists of an ointment to which another agent, such as starch, has been added. They dry and protect.

Topical corticosteroids for chronic dermatoses⁴

- Assure patients and parents that the benefits of topical corticosteroids outweigh the harms, and that they should not be afraid to use them.
- Once daily use is usually sufficient and encourages concordance with therapy.
- Apply liberally, not sparingly.
- Use on all areas of inflammation until the skin is perfectly clear.
- Maintain remission by using an emollient often.
- Resume topical corticosteroids promptly to control periodic flares.

- Avoid high-potency preparations on the face, in flexures and on infants.
- Corticosteroids can mask or prolong an infection.
- Adverse effects of long-term use are rare and include skin atrophy, striae, peri-oral dermatitis and steroid rosacea.

The relative clinical potency of topical corticosteroids is given in TABLE 111.8 .

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Table 111.8 Potency ranking of the most commonly used topical corticosteroid preparations in Australia⁴

Generic name	Formulation
Group I Mild	Lotion
Desonide 0.5%	Cream, ointment
Hydrocortisone 0.5%, 1%	
Group II Moderately potent	Cream
Betamethasone valerate 0.02%	Cream, ointment
Betamethasone valerate 0.05%	Cream
Clobetasone butyrate 0.05%	Cream, ointment
Triamcinolone acetonide 0.02%, 0.05%	
Group III Potent	Cream, ointment
Betamethasone valerate 0.1%	Cream, ointment, lotion
Betamethasone dipropionate 0.05%	Cream, ointment, fatty ointment, lotion
Methylprednisolone aceponate 0.1%	
Mometasone furoate 0.1%	Cream, ointment, lotion, hydrogel
Group IV Very potent	Cream, ointment
Betamethasone dipropionate 0.05% (in optimised vehicle)	Cream*, ointment*, lotion*, shampoo
Clobetasol propionate 0.05%	

*Not available in Australia.

Skin tips

- Do no harm. Introduce the mildest possible preparation to alleviate the problem.

- Creams tend to be drying, lotions even more so.
- Ointments tend to reduce dryness and have greater skin penetration. If wet—use a wet dressing (wet soaks and a lotion). If dry—use an ointment (salve).
- Occlusive dressings with plastic wraps permit more rapid resolution of stubborn dermatoses.
- Most toilet soaps are alkaline and are very drying; they should not be used on dry skin or dermatitis with dry skin. Soap substitutes include neutral soaps (Dove, Neutrogena), superfatted soaps (Oilatum) and non-soap cleanser (Cetaphil).
- Bath additives can be useful for dermatoses such as psoriasis, atopic dermatitis and for pruritus. For some people it may be better not to add it to the bath (diluting effect; accident from slipping) but to massage the oil into the dry itchy skin after the bath.
- Always give careful instructions to the patient regarding application of preparations: use a prepared hand-out if available.
- Alter the treatment according to the response.
- Explain the costs involved, especially where a preparation is expensive.

Rules for prescribing creams and ointments

How much?⁵

On average, 30 g of cream will cover the body surface area of an adult. The ‘rule of nines’, used routinely to determine the percentage of body surface area affected by burns (see FIG. 111.10), may also be used to calculate the amount of a topical preparation that needs to be prescribed.

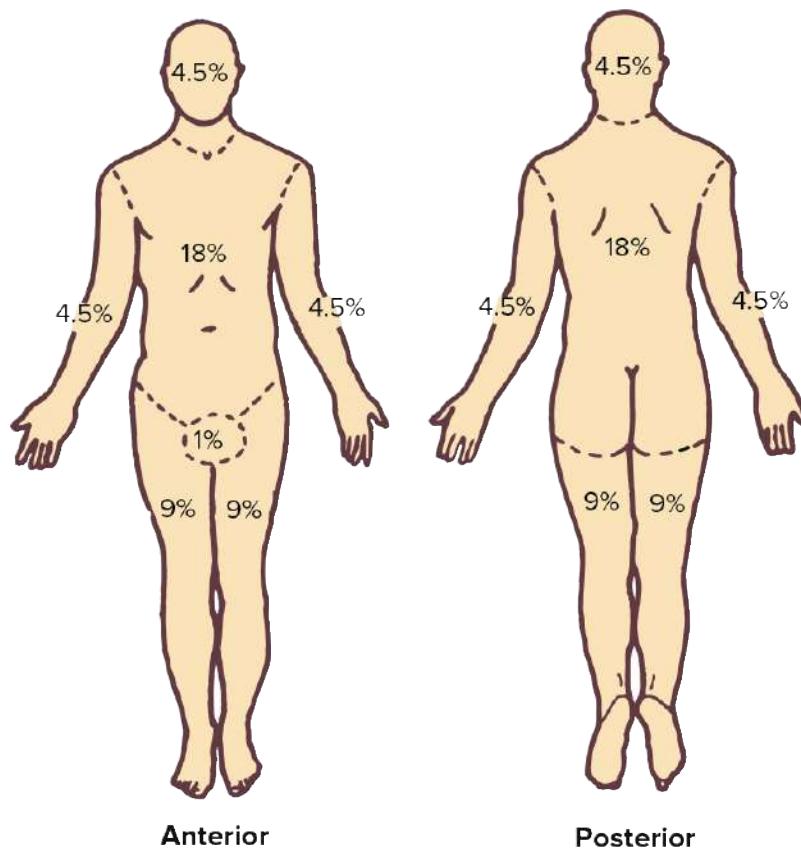


FIGURE 111.10 ‘Rule of nines’ for body surface area

For example:

- if 9% of the body surface area is affected by eczema, approximately 3 g of cream is required to cover it
- 9 g of cream is used per day if prescribed three times daily
- a 50 g tube will last 5–6 days

One gram of cream will cover an area approximately $10\text{ cm} \times 10\text{ cm}$ (4 square inches), and this formula may be used for smaller lesions.

TABLE 111.9 provides guidelines for approximate weekly quantities of skin preparations required to cover specific areas of the body.

Table 111.9	Suitable quantities of skin preparations for specific body areas ⁶ (twice daily application)
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for 1 week)

	Creams and ointments		
	Corticosteroids	Others	Lotions
Face and neck	15–30 g	15–30 g	100 mL
Both hands	15–30 g	25–50 g	200 mL
Scalp	15–30 g	50–100 g	200 mL
Both arms	30–60 g	100 g	200 mL
Both legs	100 g	100–200 g	200 mL
Trunk	100 g	400 g	500 mL
Groin and genitalia	15–30 g	15–25 g	100 mL

Some general rules

Remember:

- that 30 g
 - will cover the adult body once
 - will cover hands twice daily for 2 weeks
 - will cover a patchy rash twice daily for 1 week
- that 200 g will cover a quite severe rash twice daily for 2 weeks

Side effects of topical steroids⁷

- Skin atrophy
- Hypopigmentation
- Striae
- Telangiectasia
- Purpura
- Actiniform eruption
- Fine hair growth
- Infections

- Hypothalmic–pituitary–adrenal axis disruption

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- 5 Gambrill J. How much cream? *Aust Fam Physician*, 1982; 11: 350.
- 6 George CF et al. London: British National Formulary, Number 31, 1996: 451–6.
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112 Pruritus

It is easy to stand a pain, but difficult to stand an itch.

CHANG CH'AO 1676

Pruritus (the Latin word for itch) is defined simply as the desire to scratch.

It is one of the most important dermatological symptoms and is usually a symptom of primary skin disease with a visible rash. However, it is a subjective symptom and diagnostic difficulties arise when pruritus is the presenting symptom of a systemic disease with or without a rash —‘pruritus sine materia’. An associated rash may also be a manifestation of the underlying disease.

The broad differential diagnoses of pruritus are:

- skin disease
- systemic disease
- psychological and emotional disorders

Physiology¹

Itch arises from the same nerve pathway as pain, but pain and itch are distinct sensations. The difference is in the intensity of the stimulus. Unrelieved chronic itch, like unrelieved pain, can be intolerable and cause suicide. There are many similarities: both are abolished by analgesia and anaesthesia; subdued by counter-irritation, cold, heat and vibration; and referred itch occurs just like referred pain. Antihistamines that act on the H₁ receptor are often ineffective, suggesting that histamine is not the only mediator of itch.¹

Localised pruritus

Pruritus may be either localised or generalised. Localised itching is generally caused by common skin conditions such as atopic dermatitis (see TABLE 112.1). Scratch marks are generally presented. Pruritus is a feature of dry skin. An intense, localised itch is suggestive of scabies,

also known as ‘the itch’.

Table 112.1 Primary skin disorders causing significant pruritus

Atopic dermatitis (eczema)

Urticaria

Dermatitis herpetiformis

Grover disease

Scabies

Pediculosis

Asteatosis (dry skin)

Lichen planus

Chickenpox

Contact dermatitis

Insect bites

Itching of the scalp, anal or vulval areas is a common presentation in general practice.

A careful examination is necessary to exclude primary skin disease; a detailed history and examination should be undertaken to determine if one of the various systemic diseases is responsible.

Notalgia paraesthesia is a common localised itch and/or paraesthesia (possibly also pain) in the interscapular area. It is considered to be due to pressure on spinal nerves from spinal dysfunction. It is usually relieved by physical therapy to the thoracic spine (see [CHAPTER 15](#)).² Pruritic rashes in children commonly include atopic dermatitis, varicella, urticaria (hives), insect bites and scabies.

Generalised pruritus³

Itch without rash (pruritus sine materia) may be a manifestation of systemic disease. It can accompany pregnancy, especially towards the end of the third trimester (beware of cholestasis), and disappear after childbirth. These women are then prone to pruritus if they take the contraceptive pill.⁴

Systemic causes are summarised in [TABLE 112.2](#) and a summary of the diagnostic strategy model is given in [TABLE 112.3](#).

Table 112.2 Systemic conditions that can cause pruritus

Pregnancy

Chronic kidney failure

Liver disorders:

- cholestatic jaundice, for example:
 - cancer of head of pancreas
 - primary biliary cirrhosis
 - drugs: chlorpromazine, antibiotics
- hepatic failure

Malignancy:

- lymphoma: Hodgkin lymphoma
- leukaemia, esp. chronic lymphatic leukaemia
- multiple myeloma
- disseminated carcinoma

Haematological disorders:

- polycythaemia rubra vera ('bath itch')
- iron-deficiency anaemia
- pernicious anaemia (rare)
- macroglobulinaemia

Endocrine disorders:

- diabetes mellitus
- hypothyroidism
- hyperthyroidism
- carcinoid syndrome
- hyperparathyroidism

Malabsorption syndrome:

- gluten sensitivity (rare)

Parasitic infestation:

- scabies
- ascariasis
- filariasis
- hookworm

Drugs:

- alkaloids
- aspirin/other NSAIDs
- diuretics
- ACE inhibitors
- opiates
- cocaine
- antibiotics, e.g. penicillin, sulfonamides
- quinidine
- chloroquine
- CNS stimulants

Autoimmune disorders:

- sicca syndromes (e.g. Sjögren syndrome)

Neurological disorders:

- Parkinson disease
- brain tumour
- multiple sclerosis

Irritants:

- fibreglass
- others (e.g. soaps, detergents, chlorine)

Aquagenic pruritus

Xerosis (dry skin, winter itch)

HIV/AIDS

Psychological and emotional causes:

- anxiety/depression
- obsessive-compulsive disorder
- psychosis
- parasitophobia

Table 112.3 Generalised pruritus: diagnostic strategy model

Probability diagnosis

Xerosis or dry skin (especially in the elderly)

Dermographism

Urticaria

Psychological/emotional³

Varicella (chickenpox)

Medication

Atopic dermatitis (eczema)

Serious disorders not to be missed

Neoplasia:

- multiple myeloma
- carcinoid syndrome
- lymphoma/Hodgkin
- leukaemia: CLL
- other cancer
- HIV/AIDS

Chronic kidney failure

Primary biliary cirrhosis

Pitfalls (often missed)

Pregnancy (pruritus gravidarum)

Tropical infection/infestation/scabies

Polycythaemia rubra vera

Polyarteritis nodosa

Lichen planus

Topical irritants (e.g. fibreglass, bubble bath)

Seven masquerades checklist

Depression

Diabetes

Drugs (several)

Anaemia (iron deficiency)

Thyroid disorders (hyper and hypo)

Spinal dysfunction (notalgia paraesthesia)

Is the patient trying to tell me something?

Quite likely: consider anxiety, parasitophobia.

The history may provide a lead to the diagnosis—the itching of polycythaemia may be triggered by a hot bath which can cause an unusual prickling quality that lasts for about an hour.⁴ On the other hand, the itching may be caused by a primary irritant such as a bubble bath preparation.

Guidelines

- If pruritus is unrelieved by emollients and wakes people from sleep, it needs evaluation to exclude systemic disease.
- The prevalence of itching in Hodgkin lymphoma is about 30%. The skin often looks normal but the patient will claim that the itch is unbearable.⁴
- Pruritus due to dermographism is the most common of physical urticarias, with an exaggerated wheeling tendency in response to stroking of the skin.⁵
- Pruritus can be the presenting symptoms of primary biliary cirrhosis and may precede other symptoms by 1–2 years.³ The itch is usually most marked on the palms and soles.
- Pruritus can occur in both hyperthyroidism and hypothyroidism, especially in hypothyroidism where it is associated with the dry skin.
- Sometimes the cause is not to be found, especially in elderly patients, but is more identifiable in children.
- The itching of polycythemia may be triggered by a hot bath and lasts for at least an hour.
- The itch of Hodgkin lymphoma (in 30%) may be unbearable.

Key history

Enquire about nature and distribution of itching. Consider pregnancy, liver disease and malignancy of the lymphatic system, particularly Hodgkin lymphoma. A careful review of any drug history is important. Note any associated general symptoms such as fever.

Key examination

- General examination of the skin, abdomen and lymphopoietic systems
- Examine for dermographism by firmly drawing a line in the patient's skin with a tongue depressor and observe for an urticarial response

Key investigations to consider

- Urinalysis
- Pregnancy test
- FBE
- Iron studies

- Kidney function tests
- Liver function tests
- Thyroid function tests
- Random blood sugar
- Stool examination (ova and cysts)
- Chest X-ray
- Skin biopsy
- Allergy patch testing
- Lymph node biopsy (if present)
- Immunological tests for primary biliary cirrhosis (e.g. anti-mitochondrial antibodies)

Treatment

The basic principle of treatment is to determine the cause of the itch and treat it accordingly. Itch of psychogenic origin responds to appropriate therapy, such as amitriptyline for depression.¹

If no cause is found:

- apply cooling measures (e.g. air-conditioning, cool swims)
- avoid rough clothes; wear light clothing
- avoid known irritants
- avoid overheating
- avoid vasodilatation (e.g. alcohol, hot baths/showers—keep showers short and not too hot)
- treat dry skin with appropriate moisturisers (e.g. propylene glycol in aqueous cream)
- topical treatment

emollients to lubricate skin

local soothing lotion such as calamine, including menthol or phenol (avoid topical antihistamines)

pine tar preparations (e.g. Pinetarsol)

crotamiton cream

consider topical corticosteroids

- sedative antihistamines (not very effective for systemic pruritus)
- non-sedating antihistamines during day
- antidepressants (e.g. doxepin) or tranquillisers (if psychological cause and counselling ineffective)
- phototherapy

Pruritic skin conditions

Scabies

Scabies is a highly infectious skin infestation caused by a tiny mite called *Sarcoptes scabiei* (see FIG. 112.1). It is common in school-aged children, in closed communities such as nursing homes and in some Indigenous communities. The female mite burrows just beneath the skin in order to lay her eggs. She then dies. The eggs hatch into tiny mites that spread out over the skin and live for only about 30 days. The mite antigen, in its excreta, causes a hypersensitivity rash. Diagnosis is by dermoscopy or microscopic examination of skin scrapings.

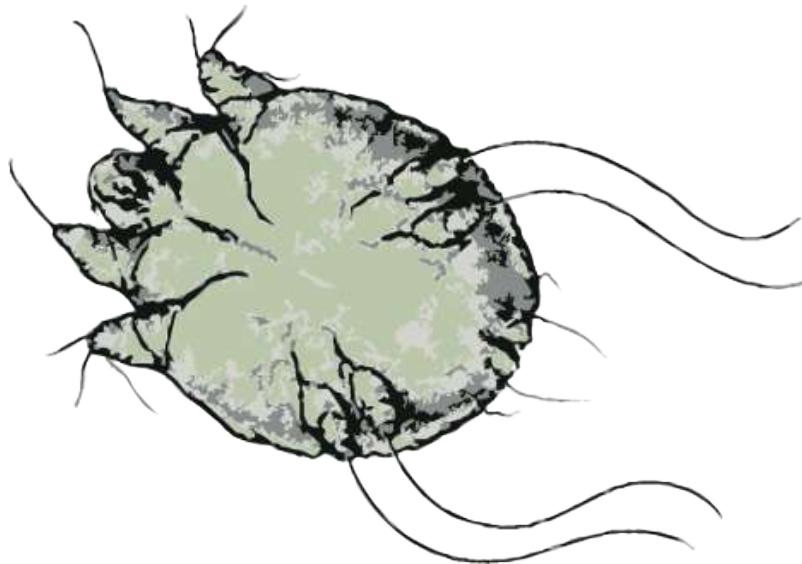


FIGURE 112.1 Scabies mite (*Sarcoptes scabiei*)

Clinical features

- Intense itching (worse with warmth and at night)
- Erythematous papular rash

- Usually on hands and wrists
- Common on male genitalia (see [CHAPTER 109](#)) (see [FIG. 112.2](#))



FIGURE 112.2 Genital scabies causing severe pruritus, showing bruising on the upper thighs from intense scratching

- Also occurs on elbows, axillae, feet and ankles, nipples of females (see [FIG. 112.3](#))

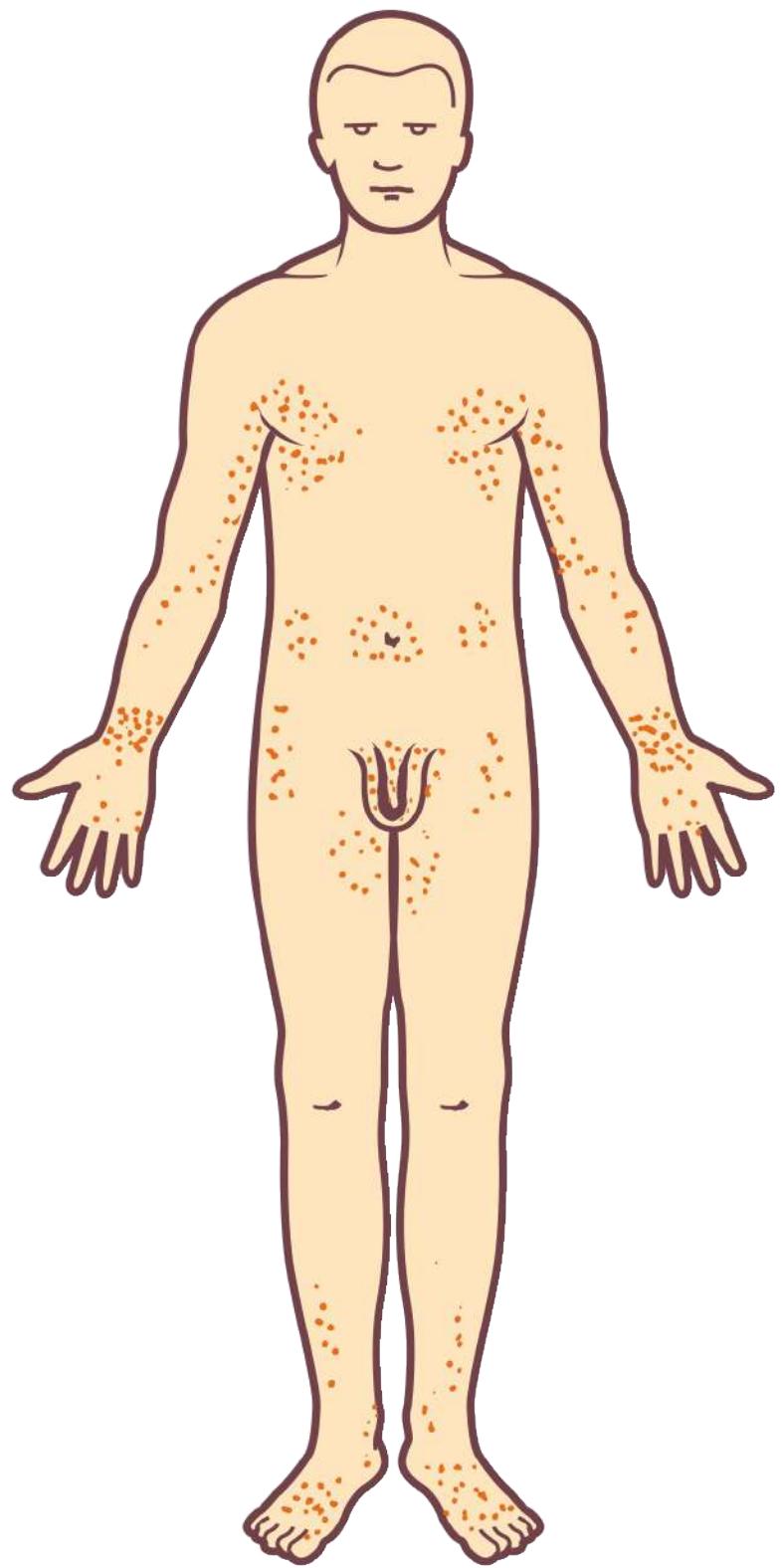


FIGURE 112.3 Typical distribution of the scabies rash

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Spread

The mites are spread from person to person through close personal contact (skin to skin), including sexual contact. They may also be spread through contact with infested clothes or bedding, although this is uncommon. Sometimes the whole family can get scabies. The spread is more likely with overcrowding and sexual activity.

Crusted (Norwegian) scabies

While the majority of cases have a relatively small number of mites (as few as 15), infestation with thousands or millions will cause the condition of crusted scabies. Diagnosis is made on a scraping which reveals vast numbers of lesions. It may be encountered in nursing homes. Treatment is with ivermectin 200 mcg/kg (o) 2 doses, 7 days apart plus topical treatment. Treatment can be difficult and may require specialist input.⁶

Treatment⁶

For all ages (except children under 6 months):

permethrin 5% cream (treatment of choice)

or (if unrelieved or allergic to permethrin)

benzyl benzoate 25% emulsion (dilute with water if under 10 years)

best applied to clean, cool, dry skin

- Apply to entire body from jawline down (including under nails [with a nail brush], in flexures and genitals).
- Leave permethrin overnight, then wash off thoroughly.
- Leave benzyl benzoate for 24 hours.
- Avoid hot baths or scrubbing before application.
- Treat the whole family at the same time even if they do not have the itch.
- Wash clothing, any soft toys and bedclothes as usual in hot water and hang in sun.
- One treatment is usually sufficient but repeat scabicide treatment in 1 week for moderate and severe infections.
- For children less than 6 months use sulphur 5% cream daily for 2–3 days or crotamiton 10%

cream daily for 3–5 days.

- Prescribe a moderately potent corticosteroid 2–3 times/d if post-treatment itch or reactive dermatitis.

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Dermatitis herpetiformis

This extremely itchy condition is a chronic subepidermal vesicular condition in which the herpes simplex-like vesicles erupt at the dermo-epidermal junction. The vesicles are so pruritic that it is unusual to see an intact one on presentation.

Some consider that it is always caused by a gluten-sensitive enteropathy. Most patients do have clinical Coeliac disease.

Clinical features

- Most common in young adults
- Vesicles mainly over elbows and knees (extensor surfaces)
- Also occurs on trunk, especially buttocks and shoulders (see FIG. 112.4)

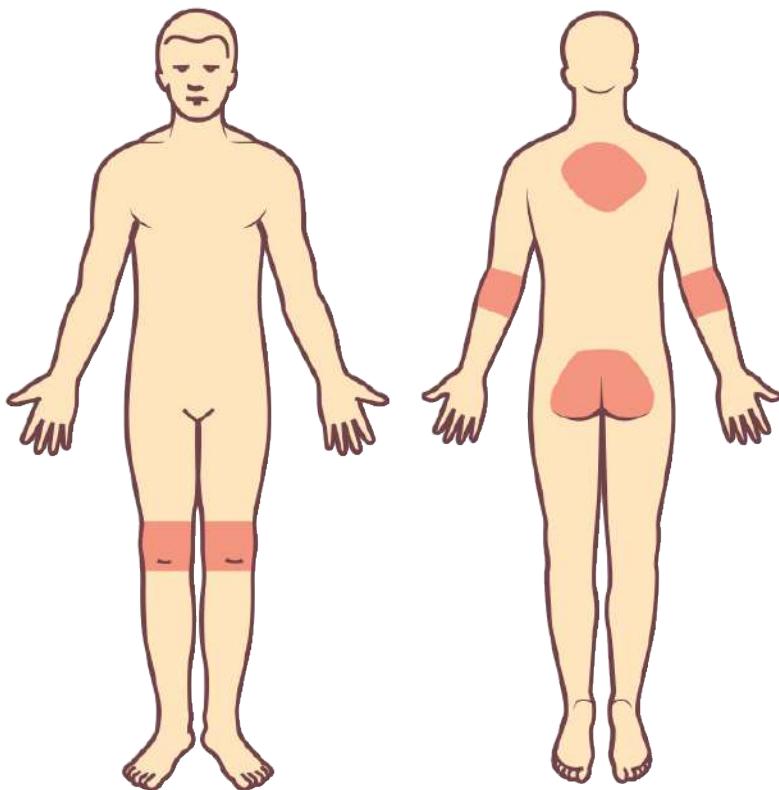


FIGURE 112.4 Typical distribution of dermatitis herpetiformis

- Vesicles rarely seen by doctors
- Presents as excoriation with eczematous changes
- Masquerades as scabies, excoriated eczema or insect bites
- Typically lasts for decades
- Associated with gluten-sensitive enteropathy
- Skin biopsy with direct immunofluorescence show diagnostic features

Treatment

- Gluten-free diet, which may suppress the condition but is slow to take effect.
- Dapsone 50 mg (o) daily, increasing up to 200 mg (o) daily with caution (usually dramatic response). Consider expert care.

⌚ Lichen planus

Lichen planus is an inflammatory disorder of unknown aetiology characterised by pruritic, violaceous, flat-tipped papules, mainly on the wrists (see FIG. 112.5) and legs. If in doubt, diagnosis is confirmed by biopsy. One differential diagnosis is a lichen planus-like drug eruption (e.g. antihypertensives, antimalarials).



FIGURE 112.5 Lichen planus: thick, hypertropic, reddish-purple papules

Clinical features

- Young and middle-aged adults
- 4Ps—papule, purple, polygonal, pruritic
- Small, shiny, lichenified plaques
- Symmetrical and flat-tipped
- Violaceous
- Flexor surfaces: wrists, forearms, groin, ankles
- Can affect oral mucosa—lacy white streaks (Wickham striae) or papules or ulcers
- Can affect nails, scalp and genital mucosa

Management

- Explanation and reassurance
- Cutaneous lichen planus usually resolves over 6–9 months, leaving discoloured marks without scarring
- Recurrence rare
- Asymptomatic lesions require no treatment
- Topical moderate to very potent corticosteroids (may use occlusive dressing)
- Oral prednisolone if not successful
- Intralesional corticosteroids for hypertrophic lesions
- Consider referral for expert advice

Pruritus ani

The generalised disorders causing pruritus may cause pruritus ani. However, various primary skin disorders such as psoriasis, dermatitis, contact dermatitis and lichen planus may also cause it, in addition to local anal conditions. It is covered in more detail in [CHAPTER 26](#).

Pruritus capitis (itchy scalp)⁷

Scalp pruritus may be caused by several common skin conditions including seborrhoeic dermatitis, atopic dermatitis, psoriasis, tinea capitis, lichen simplex chronicus, contact dermatitis and pediculosis. Look for evidence of these conditions in the scalp and treat accordingly. The less severe form of seborrhoeic dermatitis is known as pityriasis capitis or dandruff.

§ Pruritus vulvae

Refer to [CHAPTER 99](#).

§ Tinea cruris

Also known as Dhobie itch and jock itch, tinea cruris is a common infection of the groin area in young men (see [FIG. 112.6](#)), usually athletes, that is commonly caused by a tinea infection, although there are other causes of a groin rash (see [TABLE 112.4](#)). The dermatophytes responsible for tinea thrive in damp, warm, dark sites. The feet should be inspected for evidence of tinea pedis. It is transmitted by towels and other objects, particularly in locker rooms, saunas and communal showers.



FIGURE 112.6 Tinea cruris (also known as Dhobie itch and jock itch) in a young man caused by *Trichophyton rubrum*

Table 112.4 Common causes of a groin rash (intertrigo)

Simple intertrigo

Skin disorders:

- psoriasis

- seborrhoeic dermatitis
- dermatitis/eczema

Fungal:

- *Candida*
- tinea

Erythrasma

Contact dermatitis

Clinical features

- Itchy rash
- More common in young males
- Strong association with tinea pedis (athlete's foot)
- Usually acute onset
- More common in hot months—a summer disease
- More common in physically active people
- Related to chafing in groin (e.g. tight pants, and especially synthetic jock straps)
- Scaling, especially at margin
- Well-defined border (see FIG. 112.7)

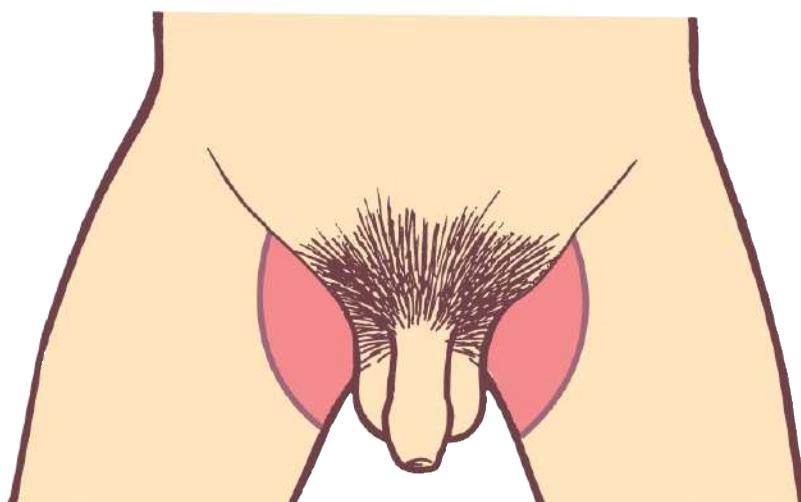


FIGURE 112.7 Dermogram for tinea cruris

If left untreated, the rash may spread, especially to the inner upper thighs, while the scrotum is usually spared. Spread to the buttocks indicates *T. rubrum* infection.

Diagnostic aids

- Skin scrapings should be taken from the scaly area for preparation for microscopy (see [CHAPTER 111](#)).
- Wood's light may help the diagnosis, particularly if erythrasma is suspected.

Management

- Fastidious drying of skinfolds.
- Apply topical terbinafine 1% cream or gel once or twice daily for 7–14 days or an imidazole topical preparation (e.g. miconazole or clotrimazole cream).
- Apply tolnaftate dusting powder bd when almost healed to prevent recurrence.
- If itch is severe, a mild topical hydrocortisone preparation (additional) can be used.
- For persistent or recurrent eruption, use oral terbinafine for 2–4 weeks or griseofulvin for 6–8 weeks.

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Candida intertrigo

Candida albicans superinfects a simple intertrigo and tends to affect patients with predisposing factors (e.g. broad-spectrum antibiotic therapy, diabetes, general debility, immune incompetence, obesity, immobility).

Clinical features

- Erythematous, macerated rash
- Occurs in flexures, submammary area and other skinfolds
- Less well-defined margin than tinea (see [FIG. 112.8](#))
- Associated satellite lesions and whitish discharge
- Yeast may be seen on microscopy