# Intertrigo

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Intertrigo — codes and concepts

open

Synonyms:

Erythema intertrigo, Eczema intertrigo, Superficial dermatitis on opposed skin surfaces

Categories:

Other inflammatory disorder, Bacterial infection, Fungal infection

Subcategories:

Acute, relapsing and chronic forms of intertrigo, Infective and inflammatory forms of intertrigo, Erythrasma, Candidal intertrigo, Flexural psoriasis, Flexural dermatitis, Hailey-Hailey disease, Granular parakeratosis, Contact dermatitis, Investigations and treatment of intertrigo

ICD-10:

L30.4, B37.2, L08.1, L40.8

ICD-11:

EK02.20, 1F23.12, 1F23.13, 1C44, EA80.1, EA80.2, EA90.52

SNOMED CT:

58759008, 238418005, 238411004, 238410003, 23856001, 266158001, 23860000, 402183009

## What is intertrigo?

Intertrigo describes a rash in the flexures, such as behind the ears, in the folds of the neck, under the arms, under a protruding abdomen, in the groin, between the buttocks, in the finger webs, or in the toe spaces. Although intertrigo can affect only one skin fold, intertrigo commonly involves multiple sites. Intertrigo is a sign of inflammation or infection.

## Who gets intertrigo?

Intertrigo can affect males or females of any age. Intertrigo is particularly common in people who are overweight or obese (see metabolic syndrome).

Other contributing factors are:

Genetic tendency to skin disease

Hyperhidrosis (excessive sweating)

Age

Diabetes

Smoking

Alcohol.

In infants, napkin dermatitis is a type of intertrigo that primarily occurs due to skin exposure to sweat, urine, and faeces in the diaper area.

Toe-web intertrigo is associated with closed-toe or tight-fitting shoes. Lymphoedema is also a cause for toe-web intertrigo.

What are the clinical features of intertrigo?

Intertrigo can be acute (recent onset), relapsing (recurrent), or chronic (present for more than six weeks). The exact appearance and behaviour depend on the underlying cause(s).

The skin affected by intertrigo is inflamed, reddened, and uncomfortable. The affected skin can become moist and macerated, leading to fissuring (cracks) and peeling.

Intertrigo with secondary bacterial infection (eg, pseudomonas) can cause a foul odour.

What causes intertrigo?

Intertrigo is due to genetic and environmental factors.

Flexural skin has a relatively high surface temperature.

Moisture from insensible water loss and sweating cannot evaporate due to occlusion.

Friction from the movement of adjacent skin results in chafing.

Intertrigo occurs more easily in environments that are hot and humid.

Diabetes, alcohol, and smoking increase the likelihood of intertrigo, especially the infectious form.

The microbiome (microorganisms normally resident on the skin) on flexural skin includes Corynebacterium, other bacteria, and yeasts. Microbiome overgrowth in warm moist environments can cause intertrigo.

Intertrigo is classified into infectious and inflammatory origins, but they often overlap.

Infections tend to be unilateral and asymmetrical.

Atopic dermatitis is usually bilateral and symmetrical, affecting the flexures of the neck, knees and elbows.

Other inflammatory disorders also tend to be symmetrical affecting the armpits, groins, under the breasts, and the abdominal folds.

Infections causing intertrigo

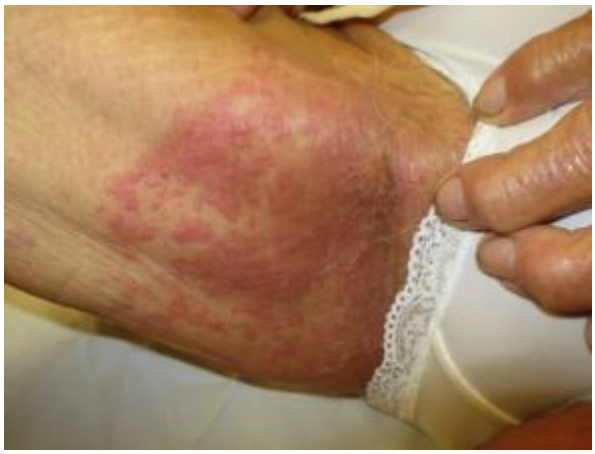
Thrush: Candida albicans

Characterised by its rapid development

Itchy, moist, peeling, red and white skin

Small superficial papules and pustules

Candida albicans



Intertrigo due to candida infection

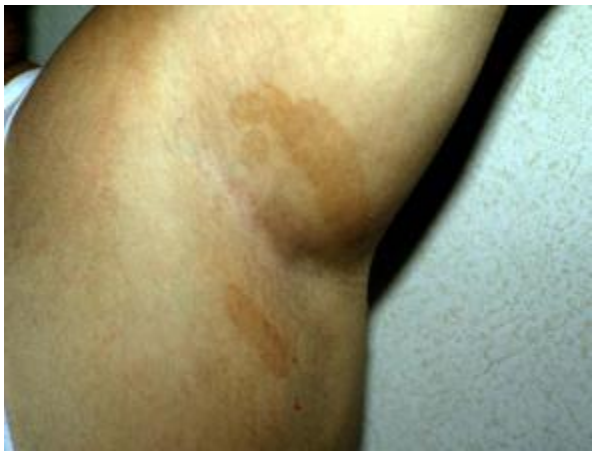
Erythrasma: Corynebacterium minutissimum

Persistent brown patches

Minimal scale

Asymptomatic (painless and non-itchy)

Erythrasma



Axillary erythrasma

Tinea: Trichophyton rubrum + T. interdigitale

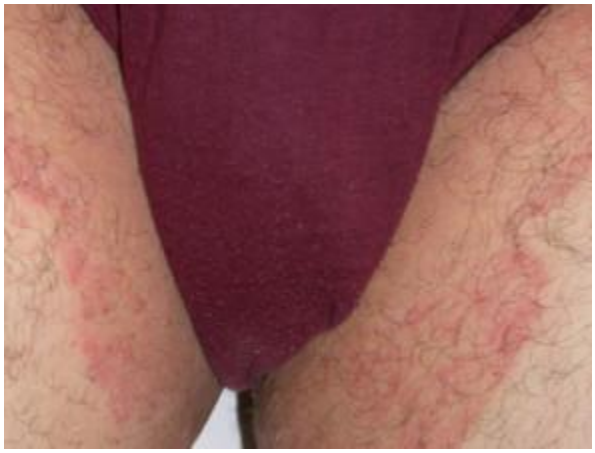
Tinea cruris (groin) and athletes foot (between toes)

Slowly spreads over weeks to months

Irregular annular plaques

Peeling, scaling

Tinea cruris



tinea cruris

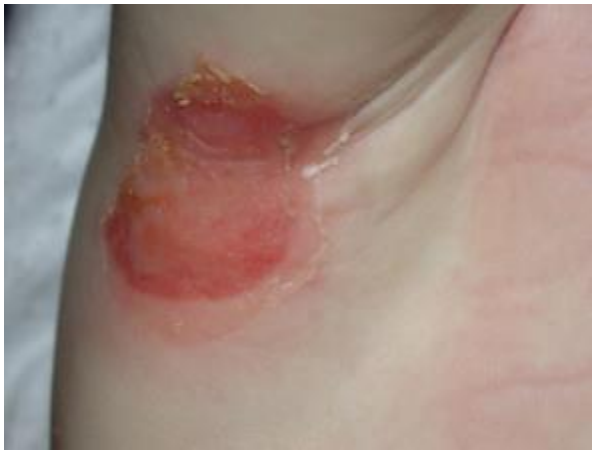
Impetigo: Staphylococcus aureus and Streptococcus pyogenes

Rapid development

Moist blisters and crusts on a red base

Contagious, so other family members may also be affected

Impetigo



Bullous impetigo

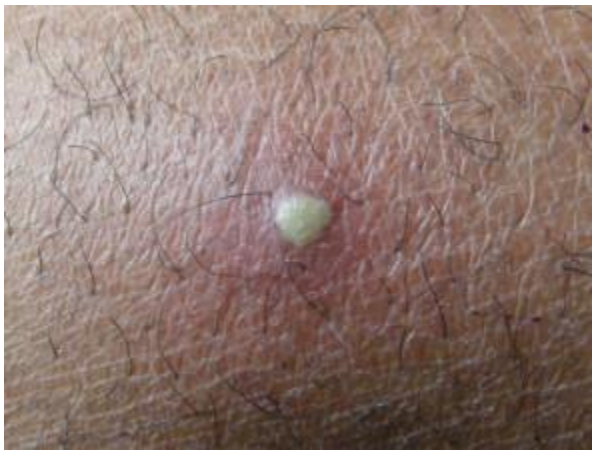
Boils: Staphylococcus aureus

Rapid development

Very painful follicular papules and nodules

Central pustule or abscess

Boil



Folliculitis: Staphylococcus aureus

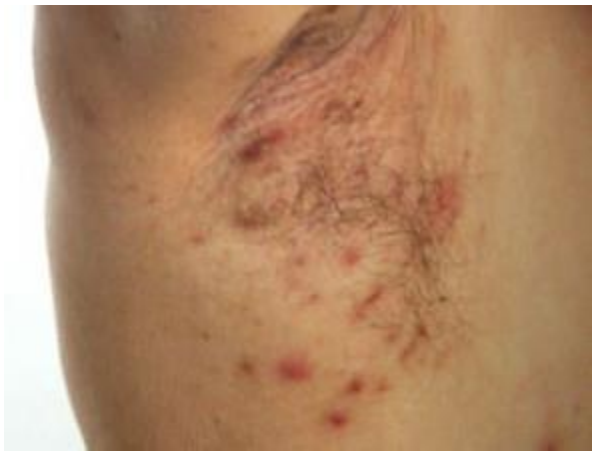
Acute or chronic

Superficial tender red papules

Pustules centred on hair follicles

Can be provoked by shaving, waxing, epilation.

Folliculitis



Folliculitis in axilla

Skin inflammations causing intertrigo

Flexural psoriasis

Well-defined, smooth or shiny red patches

Very persistent

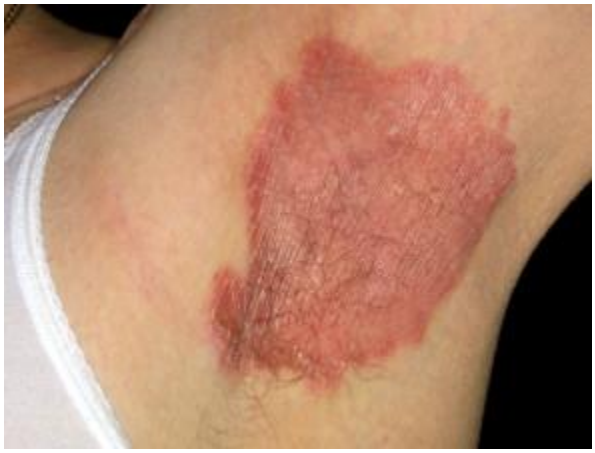
Common in submammary and groin creases

Symmetrical involvement

May fissure (crack) in the crease

Red patches on other sites are scaly

Flexural psoriasis



Flexural psoriasis

Seborrhoeic dermatitis

Ill-defined salmon-pink thin patches

Common in axilla and groin creases

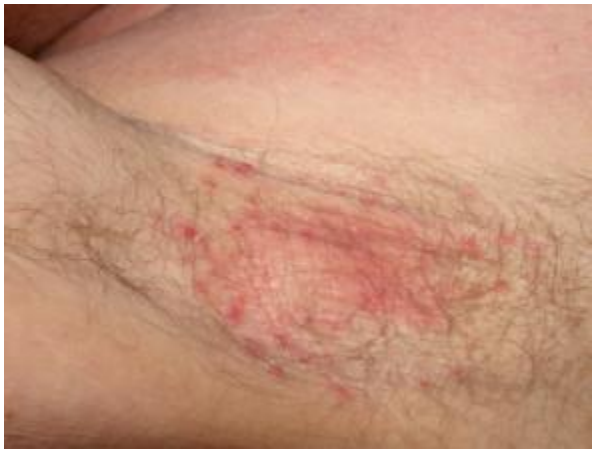
Fluctuates in severity

May be asymmetrical

Often unnoticed

Red patches on the face and scalp tend to be flaky.

Seborrhoeic dermatitis



Intertrigo due to seborrhoeic dermatitis

Atopic dermatitis

First occurs in infancy

Common in elbow and knee creases

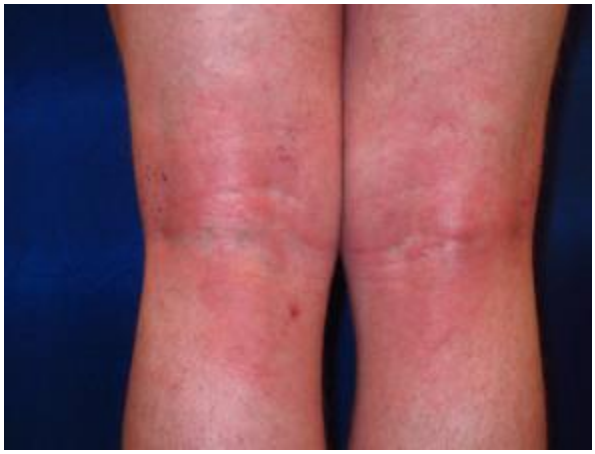
Characterised by flares

Very itchy

Acute eczema is red, blistered, swollen

Chronic eczema is dry, thickened, lined (lichenified).

Atopic dermatitis



Flexural eczema

Contact irritant dermatitis

Acute, relapsing or chronic

Irritants include:

Body fluids: sweat, urine

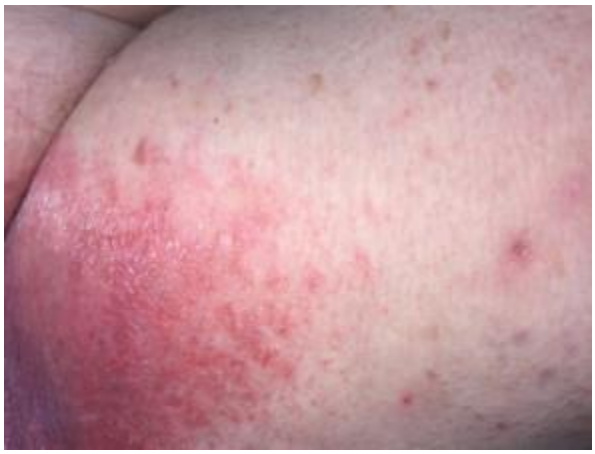
Friction due to movement and clothing

Dryness due to antiperspirant

Soap

Excessive washing.

Irritant contact dermatitis



Contact irritant dermatitis due to urine. Napkin dermatitis in adult.

Contact allergic dermatitis

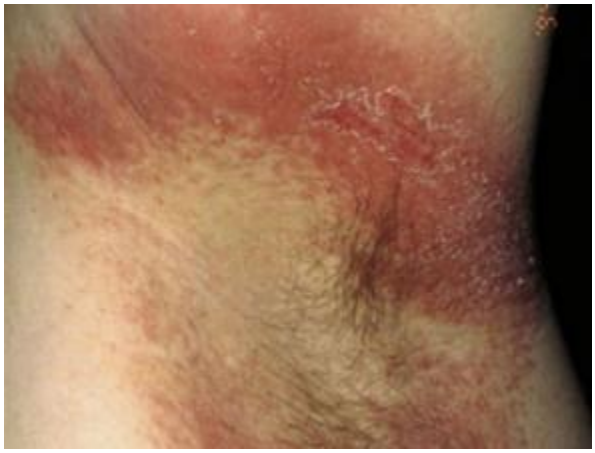
Acute or relapsing

The allergen may be:

Fragrance, preservative or medicament in deodorant, wet-wipe or other product

Component of underwear (rubber in elastic, nickel in bra wire).

Allergic contact dermatitis



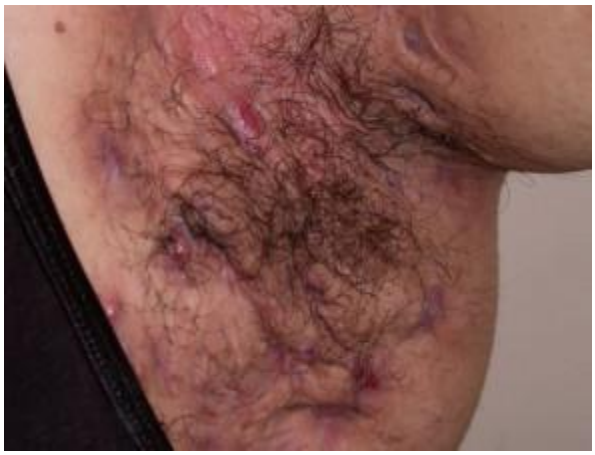
Hidradenitis suppurativa

Chronic disorder

Boil-like follicular papules and nodules

Discharging sinuses and scars

Hidradenitis suppurativa



Intertrigo due to

Hailey-Hailey disease

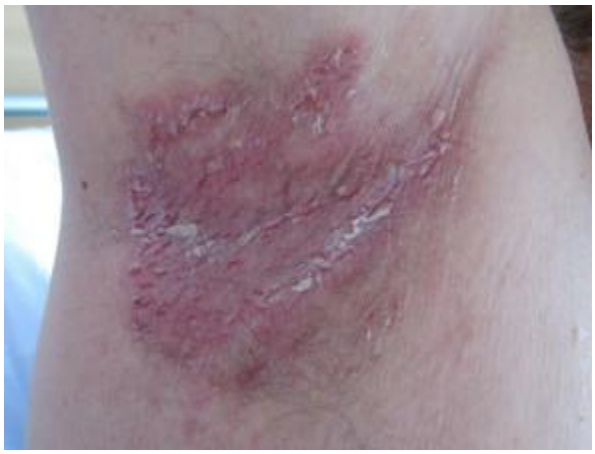
Intermittent painful shallow blisters that quickly break down

Rare inherited condition

Often starts age 20–40 years

Most troublesome during summer months

Hailey-Hailey disease



Intertrigo due to Hailey-Hailey disease

Granular parakeratosis

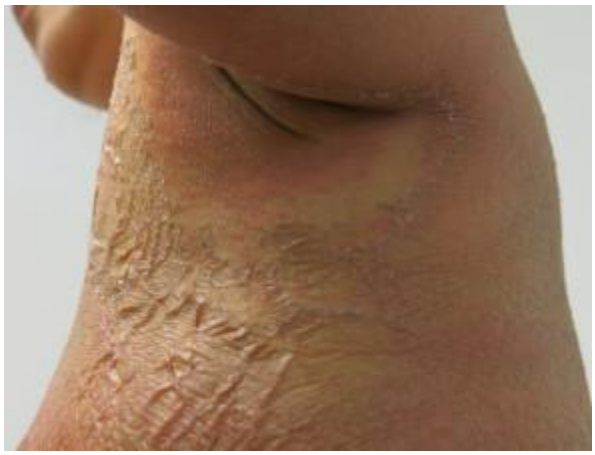
Red-brown scaly rash

Can be itchy

Rare

A biopsy is essential for diagnosis.

Granular parakeratosis



granular parakeratosis 02

Fox-Fordyce disease

Dome-shaped follicular papules in armpits

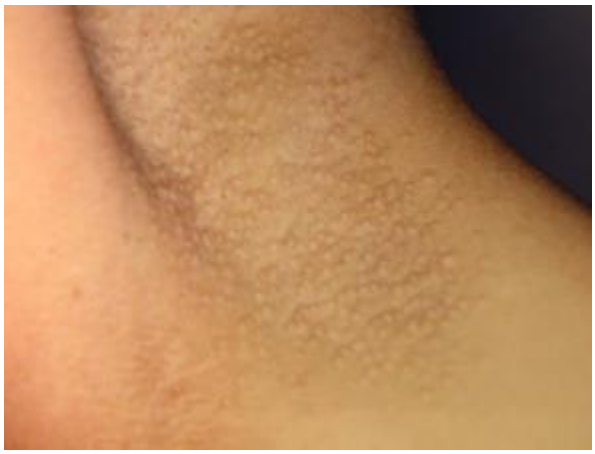
Often persistent

Asymptomatic or itchy

Reduced sweating

Excoriations and lichenification eventually occur as a result of scratching.

Fox-Fordyce disease



Axillary Fox-Fordyce disease

Toe-web intertrigo

Common in persons wearing tight-fitting shoes

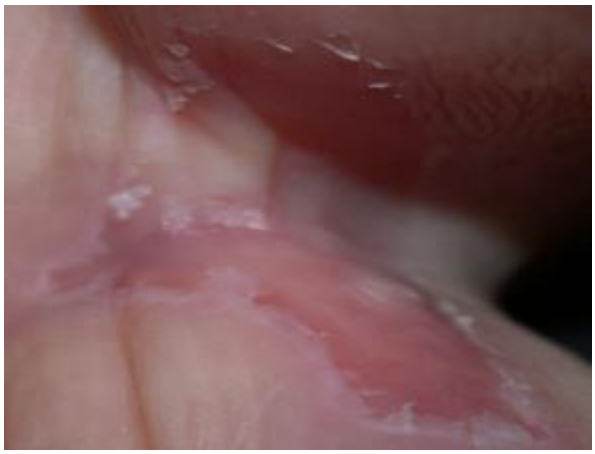
Pseudomonas aeruginosa is the most common organism

Mild toe-web intertrigo presents with erythema and scaling (athlete's foot)

Chronic intertrigo (longer than six months) causes burning pain, exudation, maceration, and inability to move the toes

A serious complication is cellulitis, often spreading to ankles and knees.

Toe-web intertrigo



Athlete's foot

What investigations should be done?

Investigations may be necessary to determine the cause of intertrigo.

A swab for microscopy and culture of bacteria (microbiology)

A scraping for microscopy and culture of fungi (mycology)

A skin biopsy may be performed for histopathology if the skin condition is unusual or fails to respond to treatment.

What is the treatment for intertrigo?

Treatment depends on the underlying cause if identified, and on which micro-organisms are present in the rash. Combinations are common.

Zinc oxide paste can be used for napkin dermatitis or incontinence-associated irritant contact dermatitis.

Physical exertion should be followed by bathing and completely drying skin flexures. A hairdryer on cool setting is an effective approach for drying underarms and breasts.

Sweating can be reduced with an antiperspirant cream or powder.

Bacterial infection may be treated with topical antibiotics such as fusidic acid cream, mupirocin ointment, or oral antibiotics such as flucloxacillin and erythromycin.

Yeasts and fungi may be treated with topical antifungals such as clotrimazole and terbinafine cream or oral antifungal agents such as itraconazole or terbinafine.

Inflammatory skin diseases are often treated with low potency topical steroid creams such as hydrocortisone. More potent steroids are best avoided in the flexures because they can cause skin thinning, resulting in stretch marks (striae atrophicae) and rarely, ulcers. Calcineurin inhibitors such as tacrolimus ointment or pimecrolimus cream are also effective in skin folds.