

## Nail problems

Nail problems affect people of all ages. Common causes of nail problems include trauma, infection and various skin diseases, such as eczema and psoriasis. Diet is generally not responsible for abnormal nail changes, unless the person is suffering from severe malnutrition. Some nail conditions need professional treatment from either a doctor or a dermatologist, while others respond to simple self-help techniques and minor lifestyle changes. When in doubt, seek medical advice.

### The structure of the nail

Nails are made from a protein called keratin. The strength, thickness and growth rate of nails are inherited characteristics. The structures of the nail include:

- **Nail plate** - the visible part of the nail.
- **Nail bed** - the nail plate sits on top of the nail bed.
- **Nail folds** - the nail plate rests inside slender skin grooves.
- **Cuticle** - a thin flap of tissue that lies over the base of the nail.
- **Nail matrix** - the site of nail growth, tucked under the skin.

### Common conditions

Some of the more common conditions that affect nails include:

- Discolouration
- Thickened nails
- Ridged nails
- Splitting nails
- Lifted nail plate
- Bacterial infection
- Fungal infection
- Trauma
- Skin diseases
- Other diseases
- Advancing age.

### Nail discolouration

The healthy nail plate is pink, and the nail looks white as it grows off the nail bed. Nails can be discoloured by various factors including:

- Nail polish
- Some medications, including antibiotics and anti-malarial drugs, and some of the drugs used in chemotherapy
- Nicotine from cigarette smoking
- Hair colouring agents.

### Thickened nails

This condition most commonly affects the toenails. Causes of thickened nails include:

- Fungal infection

- Psoriasis.

## Ridged nails

Ridges running either the length or width of the nail plate can have a number of causes, including:

- Age-related changes
- Trauma to the nail matrix
- Overzealous attention to the cuticles
- Fever or illness
- Eczema
- Rheumatoid arthritis
- Lichen planus infection.

## Splitting nails

This condition is characterised by the splitting or layering of the nail plate as it grows off the nail bed. Common causes include:

- Having constantly wet hands, especially while using soap and washing detergents.
- Frequently using and removing nail polish.
- Continuous mild trauma such as habitual finger-tapping or using the nails as tools (to pick between the teeth, for example).

## Lifted nail plate

The healthy nail plate adheres to the underlying nail bed and appears pink. The nail looks white as it grows off the nail bed. If the nail plate lifts off the nail bed, it will appear white. Common causes include:

- Overzealous cleaning under the fingernails
- Nail polishes that contain hardening chemicals such as formalin
- Rough removal of artificial nails
- Psoriasis
- Tinea (a fungal infection).

## Bacterial infection

The *Staphylococcus aureus* bacterium is a common cause of bacterial infection of the nail. Typically, the infection first takes hold in the fold of skin at the base of the nail (proximal nail fold). Without treatment, the infection can worsen to include inflammation and pus. It is often associated with candida infection, particularly when it becomes chronic. Activities that predispose a person to a bacterial nail infection include:

- Having constantly wet hands
- Overzealous attention to the cuticles
- Severe nail biting, which can expose underlying tissues to infection
- Eczema around the fingernails.

## Fungal infection

Fungal infections, such as tinea, are spread from one person to another and can involve the fingernails or toenails. People with diabetes or with compromised immune systems are at increased risk of fungal infection. The characteristics of a fungal nail infection depend on the infectious agent, but may include:

- Lifting of the nail plate off the nail bed
- Thickening of the nail plate
- Crumbling of the nail plate
- Discolouration, usually in streaks

- Flaking and pitting of the nail plate surface.

## Trauma

A blow to the nail or compulsive nail biting can cause a range of problems, including:

- Bruising of the nail bed
- Lifting of the nail plate
- Loss of the nail plate
- Nail ridges
- Subsequent deformed growth of the nail plate, if the nail matrix is injured.

## Skin diseases

Some of the skin diseases that can affect the nails include:

- Eczema (dermatitis)
- Psoriasis.

## Other diseases

Some diseases that can affect the shape, integrity and colour of the nail include:

- Lung disease
- Heart disease
- Kidney disease
- Liver disease
- Thyroid disease.

## Advancing age

As the body ages, the growth rate of both fingernails and toenails tends to slow. The change of protein in the nail plate makes the nail brittle and prone to splitting. Discolouration is also common.

## Self-help strategies

You can reduce the risk of nail problems in a variety of ways, including:

- Practise good personal hygiene.
- Wear protective gloves for wet jobs such as washing the dishes.
- Avoid harsh chemicals such as strong soaps and detergents.
- Avoid or limit the handling of chemicals such as hair dyes.
- Take care with the use of nail polish.
- Don't clean under your nails too frequently or too aggressively.
- When giving yourself a home manicure, do not push back the cuticles.
- Resist the urge to bite or tear off hangnails - use nail clippers.
- Don't bite your nails.
- Remove artificial nails carefully and according to the manufacturer's instructions.
- Don't smoke.
- Moisturise the hands frequently, particularly after washing them.
- Remember to rub the moisturiser over your nails and cuticles too.
- Treat any sign of eczema on your hands promptly.
- To protect yourself from fungal infections, don't share towels, always dry yourself thoroughly after bathing (particularly between the toes), and wear thongs in communal bathing areas such as the local gym or swimming pool.
- Make sure your shoes are well-fitting and have plenty of room for air movement.

## Professional diagnosis and treatment

Any abnormal changes to your nails should be medically investigated. See your doctor for treatment or possible referral to a dermatologist. If the cause of your nail problem is not immediately apparent, nail clippings and scrapings from beneath the nail may be taken for laboratory analysis. Fingernail infections usually respond faster to treatment than toenail infections. Depending on the cause, treatment options may include:

- Antibiotics for bacterial infections.
- Anti-fungal preparations, mainly oral tablets, for fungal infections in the nails.
- Treatment for any contributing skin disease.
- Advice on appropriate nail care.

## Where to get help

- Your doctor
- Dermatologist
- Australasian College of Dermatologists
- A podiatrist.

## Things to remember

- Common causes of nail problems include trauma, infection, and various skin diseases such as eczema and psoriasis.
- Some conditions are more problematic than others and need professional treatment from either a doctor or a dermatologist.
- If the cause of your nail problem is not immediately apparent, nail clippings and scrapings from beneath the nail may be taken for laboratory analysis.
- People with diabetes or those with compromised immune systems are more at risk of developing fungal nail infections.

**This page has been produced in consultation with, and approved by:**

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