

# Effects of polishes, acrylics and powders on fingernails

January 10 2023, by Christian Moro and Charlotte Phelps

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Choices, choices, so many choices. Credit: [Pexels/Rodnae](#), [CC BY](#)

People are increasingly opting for regular manicures—with vibrant layers of polish, gel, acrylic or powder.

Australians spend more than [\\$22 billion](#) a year on beauty treatments. And it's not slowing down—the beauty and personal care market is expected to grow at around [2–5%](#) in the next [year](#).

Manicure popularity (velvet [nails](#) are among the [latest looks](#)) could be down to fashion, social media influencers or our desire for small luxuries. But should we hold off from treatments, and give our nails a break every now and then?

## What are nails?

Nails are a unique feature in primates, made from [skin cells](#). A special arrangement of keratin, a structural protein, allows the nails to become strong and compact. Keratin is the same protein present in hair, as well as the horns, claws and hooves of other animals.

Upon maturing, the cells making up the fingernail disintegrate their [nucleus](#), giving rise to a translucent and colorless appearance.

Nails strengthen and protect the fingertips. They enable fine motor control, such as turning the pages of a book or picking up a needle from a table. They allow us to scratch ourselves when itchy, hold a better grip on some items, and pry open nuts and foods. They also enhance some sensations due to the underlying nerves.

The [curved shape](#) of the nail both strengthens it, as well as allows a nice snug fit to the underlying finger.

Fingernails grow at an average rate of 3 millimeters [per month](#), so it takes about 4–6 months to fully grow from the cuticle to the tip. This is much faster than toenails, which grow around [three times](#) slower.

Fingernails grow from the skin at the base of the nail, with the new nail

slowly pushing the rest forward. This occurs the fastest up to about [14 years](#) of age, with males exhibiting faster-growing nails than females. The [growth rate](#) evens out at [around 50](#) years of age.

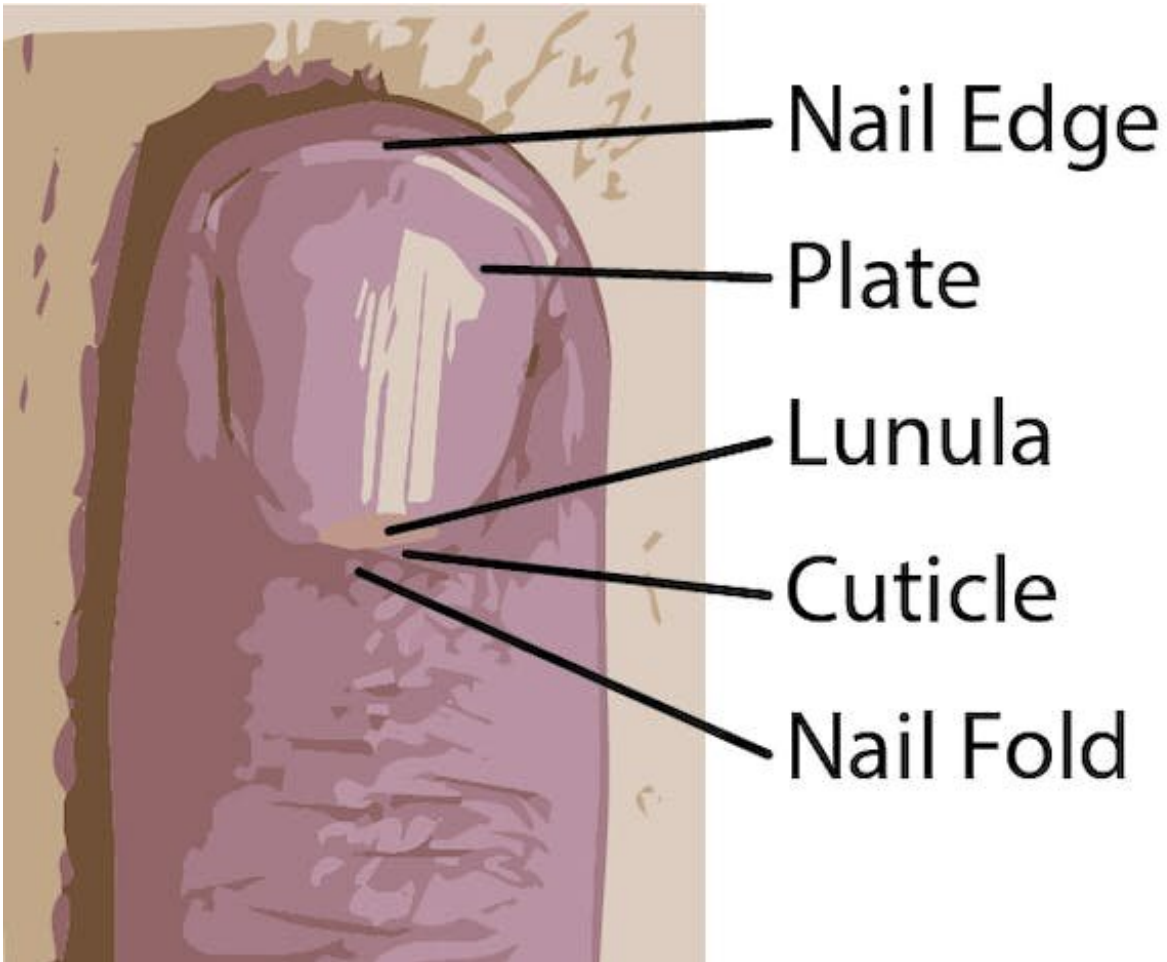
Nails can be an insight into our health. An [abnormally shaped](#) nail bed (clubbing) may suggest anemia, low tissue oxygenation, or cardiovascular disease. Discoloration or pitting could indicate [autoimmune](#) issues, infections or malnutrition.

## How do nails break?

[Dermatologists](#) see a lot of patients with [frail and brittle nails](#). Such nails can be vulnerable to [splitting or breaking](#).

The external environment does impact our nails. Both low moisture and very high moisture can cause the nails to become [brittle](#).

[Poor nutrition](#) and [age](#) can also affect the [health](#) of the nailbed and the strength and color of the nails.



Labelled fingernail. Credit: Christian Moro, Author provided

## Beautiful nails

Healthy nails are more likely to [look good](#).

[Good habits](#) to adopt for strong fingernails include trimming the nails straight across and rounding the edges, not messing with the cuticles (which help keep out nasty bugs), and not putting anything sharp under the nails.

But of course, playing around with the look of nails using shades and colors can be fun and fashionable. Around [85–90%](#) of women worldwide use nail care products.

## Can manicures do damage?

Although nail cosmetics can enhance nail appearance, they can potentially damage the underlying nails. Knowing what changes could occur is the important first step towards avoiding any permanent impact.

If you regularly paint your nails with traditional nail polish, be careful when using darker colors as this can stain the nail plate. Some ingredients in nail care products may also lead to [allergic contact dermatitis](#).

To cure, harden, and dry each layer, the nail is often exposed to light under a fluorescent bulb. Most commonly, nail salons will use UV lamps, which requires about five minutes of exposure per hand.

This can cause [cell damage](#) and aging to the skin. [Current literature](#) reports low skin cancer risk from UV [lamp exposure](#). However, the recommendation is to apply a [broad spectrum sunscreen](#) with SPF >30 [before exposure](#).

The most common method of removing gel polish is using acetone. The chemical can lead to [brittle, dry and rough nails](#) and cause separation of the nail from the nail bed.

Skin contact with acetone can also cause your skin to become dry, irritated and [cracked](#). Some damage can also be done by peeling off acrylic or gel nails.

## Maybe don't try this at home

Practicing beauty techniques at home comes with the danger of serious harm.

The glue or chemical applicants used to adhere fake nails can cause serious [burns](#). The chemicals used can also be harmful to [children](#) if left within reach. As such, going to a qualified and experienced nail technician is likely safer, provided they are taking infection precautions like using sterile tools and equipment.

Although nail cosmetics come with relatively minor risks, [dermatologists](#) often recommend sticking with your natural nails and painting them with regular polish, and allowing intermittent breaks between manicures to give your nails time to breathe.

We use the term "breathe" loosely here. Your nails receive their nourishment from the blood vessels under the skin, and do not need contact with the outside oxygen. But keeping the nails uncovered with product does give your body a chance to repair and regenerate the nail and its surrounding [skin](#), keeping the region nice and healthy.

How long of a break is up to you, depending on your nails. However, given a full nail regrows entirely in four to six months, you won't need to wait that long.

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