

# Health and Disease in Nails

The nails protect the fingertips and help you grip things firmly. The nails are at the end of the fingertips on the dorsal surface. It contains a sturdy flexible keratinous nail plate originating from the nail matrix. Soft tissue called the nail bed lies underneath the nail plate. The nail fold or the cuticle is between the skin and the nail plate. A healthy normal nail is slightly pink and the surface is convex from side to side. On average finger nails grow 1 cm in 3 months and toe nails grow 1 cm in 24 months. The nails can help give the general health and hygiene of a person through its appearance, color, nature, and shape. Sometimes doctors may examine the nails to find out about possible diseases. An abnormal nail may be due to diseases or genetics. The cause of change in the nails can be from something simple or something that's life threatening. An examination of the nails is needed for diagnosis. We discuss some abnormal findings and there possible causes for you to be aware.



### 1. Hygiene:

It very easy to tell if a nail is unhygienic. Dirt under the nails can cause the ingestion of pathogens when you eat. Improper nail cutting can cause worm problems in children. If worms crawl in the anal orifice children may scratch the area which can lodge the ova of worms under the nails and can be consumed when eating. Sharp nails can also worsen a skin disease through scratching and can accidentally cause small wounds, when a person accidentally scratches themselves.

### 2. Color of nails

- Nails are pale in anemia
- Leuconychia is when the nails are white or have white spots. This is seen in nephrotic syndrome and chronic renal failure.
- White nails is also seen in hypoalbuminemia as in cirrhosis and kidney disorders.
- Discoloration in nails can be caused by certain drugs such as antibiotics, sulpha group, anti-malarial and etc.

- Fungal infection can cause black discoloration in nails.
- Pseudomonas infection can cause black or green nails.
- Vasculitis can cause nail bed infarction, especially in SLE and polyarteritis.
- Splinter hemorrhages in subacute bacterial endocarditis, rheumatoid arthritis, trauma, and collagen vascular diseases can cause red dots in nails.
- Blunt injury can cause hemorrhage and causes blue/black discoloration.
- Kidney diseases and decreased adrenal activity can cause brown nails.
- Wilsons disease can cause blue semicircles in the nails.
- Jaundice and psoriasis can cause the nails to become yellow or yellowish. Also when the blood supply decreases the nails can become yellow.
- Yellow nail syndrome causes all nails to become yellowish with pleural effusion.



### 3. Shape of nails:

Clubbing is when the angle between the nail base and the skin is eradicated and the tissues at the base of the nail are thickened. The fingertip becomes bulbous (rounded or swollen) and looks like the end of a drumstick. The nail becomes more convex or curved. If the condition becomes worse the nail can look like a parrot beak. Causes of clubbing can be from severe chronic cyanosis, Congenital Injuries, Heart diseases like fallot tetralogy, subacute bacterial endocarditis and etc. Lung diseases like empyema, bronchiectasis, carcinoma of bronchus and pulmonary tuberculosis and abdominal diseases like crohn's disease, polyposis of colon, ulcerative colitis, cirrhosis of the liver and etc.

Koilonychia is when the nails become concave like a spoon. The nails become soft, thin and brittle. The normal convexity of the nail will be replaced with concavity. Koilonychia can be seen on nails of people with iron deficiency anemia.

Raynaud's disease can cause Longitudinal ridging in nails.

Dermatomyositis can cause ragged Cuticles.

Nail fold telangiectasia is a sign of dermatomyositis , SLE, and systemic sclerosis.

#### 4. Structure and consistency

- Fungal infection of the nail can cause discoloration, deformity, abnormal brittleness, and hypertrophy.
- Thimble pitting of the nails can be the result of acute eczema, psoriasis, and alopecia areata.
- Paronychia is the inflammation of the cuticle or nail fold.
- Onycholysis is the separation of the nail from the nail bed seen in psoriasis, infection, and after taking tetracyclines (antibiotics).
- lichen planus, epidermolysis bullosa can cause nail destruction
- Missing nail is seen in nail patella syndrome, which can be hereditary.

- Nails can become brittle in gangrene and raynaud's disease.
- Nail falling is seen in fungal infection, psoriasis and thyroid diseases.

## 5. Growth

The growth of nails is affected by decrease in blood supply and severe illness. When the disease goes away the growth starts up again which results in transverse ridges known as beau's lines, which can help you determine illness.

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