



GREEN NAIL SYNDROME

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Green nail syndrome (GNS) is an infection of the nails that leads to a greenish discoloration of nails, also known as chloronychia. The green discoloration varies from blue-green to dark green to bluish-grey. Since the discoloration is underneath the nail, it will not disappear with washing or scrubbing. The condition is usually confined to one or two nails and can involve fingernails or toenails. The nail is usually not painful; however the skin around the nail, including the cuticle, may be swollen, tender, or red.

Green nail syndrome is caused by bacteria called *Pseudomonas aeruginosa*. This bacterium flourishes in wet environments, such as jacuzzis, contact lens solution, sinks, and bath sponges. When it grows, it produces hallmark green pigments called pyocyanin and pyoverdin. These same pigments impart the green color of chloronychia.

Two major risk factors predispose to GNS. The first risk factor is when a nail becomes abnormally lifted off the nail bed; this is also known as onycholysis. When the nail is detached from the nail bed, the waterproof seal formed by the skin on the nail is lost. This creates a subungual space that collects dirt and debris and may allow an entry point for *P. aeruginosa*. Trauma to the area under the nail contributes to onycholysis. People at risk for separated nails are gardeners, janitors, and plumbers. The second important risk factor is a damp environment. Dry skin is rarely colonized or infected by *P. aeruginosa*. Nails repeatedly immersed in water are susceptible. Housewives, dishwashers, cooks, and health care personnel may be more likely to have GNS. It should also be noted that wearing tight-fitting shoes for a prolonged time, especially while exercising, is associated with GNS. This has been noted in military recruits and soccer players. Minor risk factors for GNS include nail psoriasis and fungal nail infections.

The clinical appearance of GNS makes it an easy diagnosis for a dermatologist. However if there is doubt, a nail sample can be taken for culture.

Green nail syndrome responds well to treatment. Therapy consists of cutting the detached portion of the nail, keeping nails dry, and avoiding trauma to the area. Topical antibiotics, such as bacitracin or polymyxin B, applied two to four times per day will cure most patients if continued for one to four months. Alternatively, chlorine bleach, diluted 1:4 with water, is effective in suppressing growth of *P. aeruginosa* when applied topically to affected nails. Vinegar (acetic acid) has been reported to be useful in this regard as well. Occasionally, the nail may need to be removed, if more conservative treatment fails. At these times, an oral antibiotic, such as ciprofloxacin, is often prescribed.

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