

Onychoschizia (Brittle, Splitting Nails)

Onychoschizia, commonly known as nail splitting, is a common condition observed in dermatological practice. It is characterized by the splitting, brittleness, and thinning of the nails, primarily affecting the fingernails, and is more prevalent in women. The condition can manifest in different forms, such as brittle, soft, or thin nails, and is often associated with moisture-related changes in the nail structure. While environmental factors, such as frequent exposure to water or harsh chemicals, are common causes, in rare cases, onychoschizia may signal underlying systemic issues or vitamin deficiencies.

Etiology and Pathophysiology

Onychoschizia is primarily caused by external factors, particularly repetitive exposure to wet and dry conditions. The alternating cycles of moisture absorption and loss in the nails can damage the nail plate, leading to splitting and brittleness. This condition is worsened by low humidity, especially during the winter months when indoor heating reduces atmospheric moisture, making nails more vulnerable to dehydration.

There are two main categories of brittle nails:

- **Dry and brittle nails:** This condition arises when the nails cannot retain enough moisture, often due to frequent wetting and drying. This lack of moisture leads to nail weakness and splitting.
- **Soft and brittle nails:** This form occurs when nails become overly hydrated, often due to prolonged exposure to water or chemicals, resulting in softening and weakening of the nails.

While external causes such as frequent hand washing, household chores, and chemical exposure are the most common triggers, internal factors, particularly nutritional deficiencies (e.g., iron deficiency), can also contribute to onychoschizia. However, systemic causes are relatively rare. Clinically, if the fingernails are affected while the toenails remain strong, it often suggests that external environmental factors, rather than systemic disease, are the cause.

Diagnosis

Diagnosis of onychoschizia is primarily clinical, based on the observation of nail splitting and the patient's history of environmental exposure, such as frequent wet work, use of harsh chemicals, or seasonal changes in humidity. While systemic causes are uncommon, iron deficiency is the most

frequently observed deficiency linked to brittle nails, and in such cases, a complete blood count and iron studies may be warranted to rule out nutritional deficiencies.

Treatment and Management

Managing onychoschizia (nail splitting) mainly involves reducing the factors that cause nail damage and ensuring your nails stay hydrated. Here are some treatment strategies to help improve nail health:

➤ **Topical Treatments:**

- Alpha-hydroxy acids (AHAs): Lotions containing AHAs or lanolin can help keep nails hydrated and strong. These ingredients help retain moisture and make nails more flexible.
- Elon Lotion: This product, which contains lanolin, is often recommended to strengthen brittle nails when applied regularly.
- Clear Nail Polishes with Nylon Fibers: Some nail polishes with nylon fibers can add strength to weak nails, reducing the risk of splitting.

➤ **Protection and Prevention:**

- Gloves: Wearing cotton-lined rubber gloves during household tasks like cleaning or dishwashing helps protect nails from water and chemicals that can further damage them.
- Avoidance of Harsh Chemicals: Reduce exposure to harsh chemicals such as acetone-based nail polish removers and detergents. Opt for gentler, acetone-free removers to help prevent nail brittleness.

➤ **Biotin Supplementation:** This B-vitamin has been shown to improve nail strength in some people. Taking 1 mg of biotin (2–3 tablets daily) may reduce splitting in up to 30% of individuals, though it may take up to 6 months to notice results. Biotin is generally safe, but should be avoided during pregnancy.

➤ **Nail Care Practices:** Use a fine emery board to file your nails gently in the direction of growth to avoid causing more splitting or damage. Refrain from using metal tools on your nails, as they can cause further harm. Opt for non-metal instruments for nail care.

➤ **Moisturization Regularly:** Especially during the winter or in dry environments, keeping nails moisturized is key. Hand lotions or oils containing lanolin and AHAs can improve hydration and reduce brittleness.

Conclusion

Onychoschizia is a common condition often caused by environmental factors like frequent hand washing, exposure to water, and chemicals. It can also be worsened by systemic issues such as iron deficiency. Treatment focuses on maintaining hydration and protecting the nails. Effective management includes using topical treatments, biotin supplementation, and practicing proper nail

care. Preventive steps, such as wearing gloves during household tasks and avoiding harsh chemicals, help minimize further damage. If the condition persists or worsens despite these measures, it's important to consult a dermatologist for further evaluation and treatment.

References

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