



# Have A “Good Hair” Day & A “Good Nail Day” Too!

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Literature Education Series On Dietary Supplements

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Having a *bad hair day*? How about a *bad nail day*? If so, you're not alone. Many people are dissatisfied with the appearance of their hair, as well as their nails. In the case of hair, this might be because they are experiencing hair loss, slow growing hair, dry, brittle, or otherwise poor quality hair, and prematurely greying hair. In the case of nails, it may be because of ridges, brittleness, and other abnormalities. Although the use of external products, such as shampoos, conditioners and coloring agents, nail polishes and nail conditioners, are the common approach to these problems, the internal use of certain nutrients may do much to support the appearance of healthy and beautiful hair and nails. Before discussing these nutrients, let's take a moment to clarify the issue of hair loss and nail problems.

## **Hair loss**

The use of nutrients will not help to restore hair loss resulting from male pattern baldness, which is caused by heredity, hormones and aging. Nutrient supplementation may, however, help to improve the quality of the remaining hair. Women sometimes have the same type of hair loss, but it is not as severe and usually occurs after menopause. In addition, most women lose some hair two or three months after having a baby because hormonal changes during pregnancy prevent normal hair loss. Some factors that promote hair loss are poor circulation, acute illness, surgery, radiation, skin disease, sudden weight loss, diabetes, thyroid disease, drugs such as those used in chemotherapy, stress, poor diet, and nutrient deficiency.

## **Nail problems**

The fingernails protect the nerve-rich fingertips from injury. Nails are composed of protein (amino acids), and sulfur. The nail bed is the skin on top of which the nails grow. Nails grow from .05 to 1.2 millimeters a week. Nail changes or abnormalities are often the result of nutritional deficiencies or specific conditions.

Now, onto a discussion of nutrients for hair and nail health.

## **Biotin**

Biotin is a B vitamin that plays a variety of crucial roles in our health. One of the symptoms of biotin deficiency is hair loss.<sup>1 2</sup> Not surprisingly, individuals with a biotin deficiency and hair loss or a slow hair growth rate, experienced a significant improvement in hair growth rate when supplemented with 900 mcg biotin, as well as with other doses.<sup>3 4 5</sup>

## **Cysteine**

L-cysteine is an amino acid found in many protein structures within the body. A specific family of cysteine-rich proteins is found in the hair cuticle<sup>6</sup> (the outer layer of the hair shaft) as well as in the nails. In fact, this amino acid comprises about 8% of hair. Furthermore, blood serum levels of cysteine falls with age, and cysteine is not found in large quantities in most diets.<sup>7</sup> In research where women were supplemented with cysteine, the result was a statistically significant improvement in hair quality (as determined by increased swelling of the hair shaft), and hair growth.<sup>8</sup> The fact that cysteine is a sulfur-rich amino acid means that it will also help to feed the nails as well.

## **B-Complex**

In addition to biotin, there are a number of vitamins in the B-Complex group which also play a role in hair health. In fact, an optimal hair growth potential is considered to exist when levels of specific B vitamins (including vitamin B12 and folic acid) are maintained, as well as other biochemical parameters.<sup>9</sup> This may require supplementation with B-Complex. For example, in the last study cited above regarding

cysteine, another group of women were supplemented with B vitamins and experienced even greater improvement in hair quality and growth than occurred with cysteine supplementation.<sup>10</sup> In another study, a combination of B vitamins together with the protein keratin and the amino acid cystine (which is related to cysteine), resulted in improving quality of hair and retarding hair loss in the patients tested.<sup>11</sup>

Certain B vitamins have also been shown to help restore prematurely greying hair to its natural color. Now it should be understood that a variety of genetic, metabolic, nutritional and acquired disorders result in hair color changes. When the underlying defect can be corrected, hair color usually returns to normal. Such has been the case with the B vitamin PABA<sup>12</sup>, vitamin B6 (which helped correct high homocysteine levels)<sup>13</sup>, and vitamin B12<sup>14 15</sup>. Vitamin B12 deficiency has also been shown to be associated with abnormally course hair.<sup>16</sup>

### Vitamin C

Vitamin C helps to form the fibrous structural protein known as collagen, the single most important protein of connective tissues.<sup>17</sup> Consequently, vitamin C may play a role in hair health. In fact, cases of vitamin C deficiency have been associated with poor quality "cork-screw hair."<sup>18</sup>

### Other Nail Nutrients

The following nutrients have benefits for nails as indicated:

#### Iron

A deficiency of iron can lead to horizontal ridges on the nail, and spoon shaped nails.

#### Silica

Silica (silicon) is a trace mineral used by the skeletal system to add strength to the bones. It has a similar strengthening effect on the nails.

#### Calcium, Magnesium

A deficiency of either calcium or magnesium can lead to brittle or soft, splitting nails (so can a deficiency of vitamin E), as well as vertical ridges on the nail.

#### Gelatin

Gelatin has been traditionally used as a protein source for individuals who are attempting to strengthen their nails and promote nail growth.

### Conclusion

Maintaining an optimal level of the aforementioned nutrients may help to support and promote the appearance of healthy and beautiful hair and nails. The use of these nutrients in a supplemental form will help to assure an adequate intake.

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