

# Hair, Skin and Nails

**Doctor's  
BEST**

Science-Based Nutrition™



## BENEFITS

- Helps support healthy hair, skin and nails\*
- Contains 6,000 mcg of Biotin to help support the overall health of hair, skin and nails\*
- Contains Vitamin C, to help support collagen production\*
- Formulated with vegan Hyaluronic Acid to help support healthy skin\*
- 6mg of natural Astaxanthin helps enhance skin elasticity and decrease visible signs of aging\*
- Bamboo silica helps maintain hair strength and elasticity\*

## CLINICAL STUDIES

One study analyzed all visits to a nail consultation practice over a six-month period, revealing forty-four patients who had been prescribed the B-vitamin biotin. Of these, thirty-five who took daily supplementation were subjectively evaluated. Twenty-two of thirty-five (63 percent) showed clinical improvement and thirteen (37 percent) reported no change in their condition. The results of this retrospective study suggest a positive response to biotin in the treatment of brittle nails in many patients<sup>1</sup>.

Another study tested whether any effects of biotin therapy for human nail health could be corroborated by scanning electron microscopy. Researchers investigated the distal ends of the fingernails from 32 persons. Subjects were placed into three groups: group A consisted of 10 control subjects with normal nails, group B comprised eight patients with brittle nails studied before and after biotin treatment, and group C was 14 patients with brittle nails in whom the administration of biotin did not coincide exactly with the initial and terminal clipping of the nails. Those given biotin experienced a significant increase in nail thickness, a significant reduction in nail splitting and improvement in the dorsal surface of brittle nails, which became more regular<sup>2</sup>.

A third study examined the effect of biotin on human dystrophic finger

nails. 71 patients were treated with a daily oral dose of biotin of 2.5 mg. Out of the 45 cases evaluated, 41 (91%) showed definite improvement with firmer and harder finger nails after an average treatment of 5.5 +/- 2.3 months. In 4 of the 45 patients (9%), the improvement was questionable. None of the patients considered the treatment altogether ineffective. Researchers concluded that biotin in most cases provides an effective therapy for patients with brittle nails<sup>3</sup>.

Carotenoids such as astaxanthin can provide photoprotection in humans. Researchers compared the modulation of UVA-related injury by different carotenoids. Human dermal fibroblasts (HDF) were exposed to moderate doses of UVA. Astaxanthin exhibited a pronounced photoprotective effect and counteracted all measured UVA-induced alterations to a significant extent. Uptake of astaxanthin by fibroblasts was higher than that of the other two carotenoids tested. Astaxanthin showed the highest photostability of the three carotenoids tested. The data indicate astaxanthin has a superior preventive effect towards photo-oxidative changes in human cell culture<sup>4</sup>.

Other studies had similar findings regarding the skin-protective effects of astaxanthin. Specifically, astaxanthin as an effective skin antioxidant,<sup>5</sup> astaxanthin protecting against UVA-induced skin photo-aging such as sagging and wrinkles,<sup>6</sup> and astaxanthin effectively preventing UV-induced damaged skin, and thereby inhibiting epidermal cell damage and death<sup>7</sup>.

Other researchers completed two human clinical studies measuring the effects of astaxanthin on skin. One involved 30 healthy female subjects for 8 weeks. Significant improvements were observed by combining 6 mg per day oral supplementation and 2 ml per day topical application of astaxanthin. Astaxanthin showed improvements in skin wrinkle, age spot size, elasticity, skin texture, moisture content of corneocyte layer and corneocyte condition. This suggests astaxanthin can improve skin condition in all layers: corneocyte layer, epidermis, basal layer and dermis.

## Supplement Facts

Serving Size 2 veggie capsules		Servings per container 60 servings	
Amount per serving	% Daily Value	Amount per serving	% Daily Value
Vitamin A (as retinyl palmitate)	1000 IU 20%	Phosphorus (from tricalcium phosphate)	21 mg 2%
Vitamin C (as ascorbic acid)	300 mg 500%	Zinc (from zinc citrate)	12 mg 80%
Vitamin E (as d-alpha tocopherol)	60 IU 200%	Inositol	50 mg †
Vitamin B3 (as niacinamide)	25 mg 125%	<b>Beauty Blend</b>	
Vitamin B6 (from pyridoxine HCl)	25 mg 1250%	Silica (from bamboo stem and exudate extract)	40 mg †
Biotin	6000 mcg 2000%	Hyaluronic Acid (as sodium hyaluronate)	30 mg †
Pantothenic Acid (from calcium d-pantothenate)	50 mg 500%	Astaxanthin (extract from <i>Haematococcus pluvialis</i> microalgae)	6 mg †
Calcium (from tricalcium phosphate, calcium pantothenate)	47 mg 5%		

†Daily Value not established.

**Other Ingredients:** Modified cellulose (vegetarian capsule), microcrystalline cellulose, anthocyanin extract powder, silicon dioxide, magnesium stearate (vegetable source).

**Suggested Adult Use:** Take 2 capsules daily, with or without food, or as recommended by a nutritionally-informed physician.

**Non-GMO / Gluten Free / Soy Free / Vegan**

Store in a cool dry place.

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A separate randomized double-blind placebo controlled study involved 36 healthy male subjects for 6 weeks. Crow's feet wrinkle and elasticity; and transepidermal water loss were improved after 6 mg of daily astaxanthin supplementation. Moisture content and cheek sebum oil level showed strong improvement. These results suggest astaxanthin improves skin condition <sup>8</sup>.

Another study investigated effects of dietary astaxanthin and collagen hydrolysate supplementation on moderately photoaged human skin. 44 healthy subjects were treated with astaxanthin (2 mg/day) and collagen hydrolysate (3 g/day) or placebos for 12 weeks. Elasticity and hydration properties of facial skin were evaluated. In addition, procollagen type I, fibrillin-1, matrix metalloproteinase-1 (MMP-1) and -12, and ultraviolet (UV)-induced DNA damage in artificially UV-irradiated buttock skin were evaluated before and after treatment. The supplement group showed significant improvements in skin elasticity and transepidermal water loss in photoaged facial skin after 12 weeks compared with the placebo group. In the supplement group, expression of procollagen type I mRNA increased and expression of MMP-1 and -12 mRNA decreased compared with those in the placebo group. These results demonstrate that dietary astaxanthin combined with collagen hydrolysate can improve elasticity and barrier integrity in photoaged human facial skin, and such treatment is well tolerated <sup>9</sup>.

Hyaluronic Acid (HA) is present in many tissues of the body and is essential for maintaining skin moisture; skin contains about half the body's HA mass. Due to its viscosity and moisturizing effect, HA is a popular dietary supplement to promote skin moisture. This randomized, double-blind, placebo-controlled clinical study found that ingested HA increased skin moisture and improved treatment outcomes for patients with dry skin. HA is absorbed by the body and distributed, in part, to the skin. Ingested HA contributes to increased synthesis of HA and promotes cell proliferation in fibroblasts. The researchers concluded that HA ingestion moisturizes the skin and may improve the quality of life for people with dry skin <sup>10</sup>.

Another research effort tested Vitamin C as a free radical scavenger antioxidant in human skin. The study measured changes in radical-scavenging activity of human skin due to supplementation with different doses of vitamin C. 33 volunteers were supplemented with vitamin C or placebo for 4 weeks. The skin radical-scavenging activity was measured with electron paramagnetic resonance spectroscopy. After 4 weeks, intake of 100 mg vitamin C/day resulted in a 22% increase in radical-scavenging activity. Intake of 180 mg/day resulted in an increase of 37%. No changes were found in the placebo group. The researchers concluded that orally administered vitamin C increases radical-scavenging activity of the skin. The effect occurs fast and is enhanced with higher doses of vitamin C <sup>11</sup>.

A different clinical trial studied whether oral supplementation with D-alpha-tocopherol (Vit. E), L-ascorbic acid (Vit. C), or Vit. E combined with Vit. C influenced radiation-induced damaged skin in healthy volunteers. Researchers investigated the following groups in a prospective, randomized and placebo controlled study: Group (1) Vit. E 2 g/day, group (2) Vit. C 3 g/day, group (3) Vit. E 2 g/day combined with Vit. C 3 g/day, and group (4) placebo. The researchers concluded that Vit. E and Vit. C act synergistically in sunburn suppression <sup>12</sup>.

Another study assessed the effects of vitamins D and E supplementation on dry, itchy skin. Forty-five patients were included in a randomized, double-blind, placebo-controlled trial. They were randomly divided into four groups and treated for 60 days: group P (n = 11), vitamins D and E placebo; group D (n = 12), 1600 IU vitamin D-3 plus vitamin E placebo; group E (n = 11), 600 IU synthetic all-rac- $\alpha$ -tocopherol plus vitamin D placebo; and group DE (n = 11), 1600 IU vitamin D-3 plus 600 IU synthetic all-rac- $\alpha$ -tocopherol. The study results show beneficial effects of vitamins D and E supplementation in treating dry, itchy skin <sup>13</sup>.

A similar human clinical trial measured the effect of zinc supplementation on dry, itchy skin. 58 children with AD and 43 controls (age range 2-14 years) were given oral zinc supplements. The researchers concluded that, after 8 weeks, oral zinc supplementation was effective in treating dry, itchy

skin in patients with low baseline hair zinc levels <sup>14</sup>.

A study investigated the effect of silica on skin, nails and hair in a randomized, double blind, placebo-controlled study. Fifty women with photodamaged facial skin were administered orally during 20 weeks, 10 mg silica/day or a placebo. The study concluded that oral intake of silica during the 20 weeks resulted in a significant positive effect on skin surface and skin mechanical properties, and on brittleness of hair and nails <sup>15</sup>.



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## SCIENTIFIC REFERENCES



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