

**Press Release  
(July 10, 2007)**

**Compelling new clinical research adds to mounting evidence demonstrating oral supplementation with choline-stabilized orthosilicic acid (ch-OSA®) improves the quality of human hair.**

An international research team recently investigated, with success, the effects of oral ch-OSA on hair thickness and various hair strength and elasticity parameters.

University of Cincinnati College of Pharmacy Professor R. Randall Wickett presented the study results, concluding that ch-OSA safely and significantly improves hair fiber thickness and helps reduce loss of hair elasticity and strength, during the Fifth International Congress of Hair Research held in Vancouver Canada on June 13-16, 2007. This meeting is believed to be the largest medical hair conference ever.

Forty-eight (48) healthy Caucasian women with fine hair participated in the 9-month, randomized, double-blind, placebo-controlled trial. Their average age was 43.3 years.

Half the women supplemented their regular diet with 10 mg of silicon given in the form of choline-stabilized orthosilicic acid (ch-OSA; 5 mg Si capsules taken twice daily). The other half received a placebo with an identical appearance, taste, odor, and packaging. All the volunteers refrained from using pharmaceutical compounds, other dietary supplements, and from chemically treating their hair while participating in the study.

Hair samples were taken at the beginning of the study (baseline) and after 9 months of supplementation. Considering that hair has an elliptical cross-sectional shape, researchers evaluated hair thickness by measuring major and minor axis and calculating the diameter and cross sectional area (surface of a cross section) of hair fibers using well-accepted methods. Various tensile strength parameters associated with hair elasticity and strength were also measured using validated methods.

The cross sectional area and diameter of hair fibers increased significantly after 9 months amongst women in the ch-OSA group but not in the placebo group. The average 7.8 percent increase in cross sectional area amongst those in the ch-OSA group was more than twice as great as the non-significant increase observed in the placebo group. The diameter of hair fibers increased in the ch-OSA group with an average of 2.3 micrometers (3.8%), compared to 1 micrometer (1.7%) in the placebo group

Hair tensile strength characteristics decreased over the 9-month study period in both groups, most likely due to seasonal influences. The hair elastic gradient decreased in both groups but the change was significantly smaller in the ch-OSA™ group (-4.52%) compared to the placebo (-11.9%). Additionally, hair break load decreased significantly in the placebo group (-10.8%) but not in the ch-OSA supplemented group (-2.20%).

The authors of this study believe there are two possible mechanisms of action, possibly both working in synergy, responsible for observed hair quality improvements:

Previous work indicates that supplementation with ch-OSA stimulates collagen synthesis improving the collagen network in the dermis. In the dermis, collagen is formed by fibroblasts. Fibroblasts also form dermal papilla, the active hair formation sites. The volume of dermal papilla was shown in other studies to determine the volume of the hair follicle and therefore also the morphology of hairs fibers. By stimulating the collagen synthesis in fibroblasts of dermal papilla, the volume of the papilla might be improved resulting in thicker hair.

The remarkable mechanical properties of hair are also dependant on keratin, a polypeptide. Orthosilicic acid delivered by ch-OSA is known to bind with positively charged amino-groups in peptides. This structural interaction might improve the mechanical properties of keratin resulting in improved hair tensile properties.

This study titled “*Effect of oral intake of choline-stabilized orthosilicic acid on hair tensile strength and morphology in women with fine hair*” expands upon prior clinical research showing beneficial effects on human hair from orally consuming this same low dosage of ch-OSA. Previously, a significant reduction of hair brittleness was observed in a 20-week study titled “*Effect of oral intake of choline-stabilized orthosilicic acid on skin, hair and nails in women with photodamaged skin*” published in Archives of Dermatological Research (2005) 297: 147-153.

About ch-OSA: Choline-stabilized orthosilicic acid is manufactured by Bio Minerals NV (Destelbergen, Belgium) and is protected by U.S. Patent Number 5,922,360 and other patents pending. Clinical Research, covering both skin & bone health [1, 2], documents the powerful actions of this preparation in stimulating collagen production.

ch-OSA is commercially available in specialty health food stores as BioSil™ in the USA and in Canada.

**For additional information please contact Mike Danielson at Media Relations (612) 798-7214**

<sup>1</sup> Barel et al., “*Effect of oral intake of choline-stabilized orthosilicic acid on skin, hair and nails in women with photodamaged skin*” (2005) Arch Dermatol Res, 297: 147-153

<sup>2</sup> Spector et al., “*Effect on Bone Turnover and BMD of Low Dose oral Silicon as an adjunct to Calcium/Vitamin D3 in a Randomized, Placebo-Controlled Trial*” (2005) J Bone Research, 20: SA421