A SCIENTIFIC SOLUTION TO UNSIGHTLY CELLULITE

Cortisol secreted in response to stress leads to fat storage beneath the skin, thereby aggravating cellulite. Glycyrrhetinic acid, a compound derived from licorice, fights this response1315 making it a promising candidate for cellulite therapy.

"The mechanism of action of glycyrrhetinic acid is to reduce fat. Cortisol is involved in the distribution and deposition of fat, which is regulated by an enzyme called 11-beta-hydroxysteroid dehydrogenase," Decio Armanini, MD, professor of endocrinology at the University of Padua in Italy, tells Life Extension. "Glycyrrhetinic acid, the active principal of licorice root, blocks 11-beta-hydroxysteroid dehydrogenase type 1, thus reducing the availability of cortisol at the level of adipocytes."

A groundbreaking study by Dr. Armanini's group15 showed a promising effect of topical application of a cream containing 2.5% glycyrrhetinic acid in reducing the thickness of thigh fat, as measured by ultrasound. Eighteen healthy young women, 20 to 33 years old and of normal weight, were randomly assigned to apply a cream containing glycyrrhetinic acid cream or placebo to one thigh.

After one month of treatment with glycyrrhetinic acid cream, both the circumference and the thickness of the superficial fat layer were reduced compared with the opposite, untreated thigh, and also compared with the placebo group. Both comparisons were statistically significant (P <0.005). In women treated with glycyrrhetinic acid cream, the thickness of the superficial fat layer decreased by more than 10%, from 16.8 to 14.7 mm.15

"Orally ingested licorice and its active principal glycyrrhetinic acid can produce retention of sodium and water and decreased serum potassium and hypertension," Dr. Armanini says. "[In this study using topical glycyrrhetinic acid], no changes were observed in serum potassium, blood pressure, plasma renin activity, plasma aldosterone, or cortisol."

"The effect of glycyrrhetinic acid is at the level of fat cells. It could be effectively and safely used in the reduction of unwanted local fat accumulation," Dr. Armanini says. "We recommend the application of this cream to our patients with cellulite [related to] excessive topical fat accumulation (two applications per day). Its use is recommended [over] a limited skin surface (where cellulite is more evident as demonstrated in our study)."

Other research by Dr. Armanini's group suggests that topical application of cream containing glycyrrhetinic acid could be helpful for acne and hirsutism (excessive facial or body hair in women), perhaps because of its antibacterial activity and its ability to counteract the effects of male hormones1618.

As well as its effects on fat deposition, glycyrrhetinic acid also has known anti-inflammatory effects1920 according to Dr. Thornfeldt. Fighting inflammation could, in theory, help break the vicious cycle of edema that aggravates cellulite. In fact, an extract of licorice root has been shown to reduce inflammation and swelling in the ear of laboratory mice, and even protect against skin tumors caused by toxic compounds.21

The anti-inflammatory activity of licorice root could theoretically protect the connective tissue in skin by reducing the expression of proinflammatory cytokines and suppressing enzymes that degrade collagen22 and other structural support proteins of the skin.

"Glycyrrhetinic acid's apparent benefit in treating signs of skin photoaging with topical formulations suggests it will help diminish visible cellulite by reversing the atrophic skin and connective tissue component of this condition," Dr. Thornfeldt says. "Formulating this ingredient with horse chestnut for topical application would seem to be promising as a cellulite therapy."

How Licorice Root Fights Stress-Related Fat Deposition

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