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L-ARGININE CREAM MAY IMPROVE BLOOD FLOW, TEMPERATURE IN THE FEET OF DIABETICS

*Temperature increased 8 degrees, circulation
improved by 35%.*

TOPICAL L-ARGININE CREAM improves blood flow and temperature in the feet of diabetics, according a preliminary trial published in the January issue of *Diabetes Care*.

"This pilot study showed that arginine does increase blood flow, but it is not yet clear if this translates into fewer foot ulcers or better healing of ulcers," American Diabetes Association Vice President Robert Rizza, MD, told Medscape. He is a professor of medicine in the division of endocrinology and diabetes at the Mayo Clinic in Rochester, Minnesota, and was not involved in this study.

L-arginine, an amino acid classified as a dietary supplement, is the biochemical precursor of nitric oxide, which controls local blood flow by relaxing endothelial smooth muscle. In diabetes, L-arginine levels are reduced while levels of asymmetric dimethylarginine, an inhibitor of the enzyme that converts L-arginine to nitric oxide, are elevated. Transdermal delivery of exogenous L-arginine is said to restore blood flow by reversing these biochemical defects.

In this double-blind, vehicle-controlled, crossover-design pilot with washout periods of one week, 16 subjects with diabetes and impaired foot circulation were enrolled and 13 completed the study. With L-arginine cream, average Doppler flow increased 33% at the metatarsal and 35% at the Achilles tendon, and average temperature increased 5 degrees at the metatarsal and 8 degrees at the great toe.

"That is a huge amount," study author Eric T. Fossel, PhD, told Medscape. "It is true that this was a small study, but these are very convincing statistics."

Because the effect of L-arginine persisted throughout the washout period, Dr. Fossel altered the analysis to determine the effect from cumulative

exposure to L-arginine throughout the study. This eliminated the possibility of comparing active cream with placebo.

Dr. Rizza called these findings "intriguing but preliminary" and recommended additional research to determine if the cream has any clinical benefit in preventing or reducing amputations or other foot complications.

"We need better treatments, but there are many things that diabetics can do to reduce their risks," he said, urging daily foot inspection, better glucose control, exercise, quitting smoking, and protecting the feet with well-fitting shoes. *Diabetes Care*, 2004;27:284-285

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