Alpha-tocopherol bioavailability lower in metabolic syndrome

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(HealthDay)—For adults, α-tocopheraol bioavailability is unaffected by dairy fat quantity but is lower in those with metabolic syndrome (MetS), according to a study published online Oct. 7 in *The American Journal of Clinical Nutrition*.

Eunice Mah, Ph.D., from Ohio State University in Columbus, and colleagues examined dose-dependent effects of dairy fat and MetS health status on α-tocopherol pharmacokinetics in plasma and lipoproteins in a randomized crossover study. Ten healthy adults and 10 with MetS ingested encapsulated hexadeuterium-labeled (d_6)-RRR-α-tocopherol with 240 mL nonfat (0.2 g fat), reduced-fat (4.8 g fat), or whole (7.9 g fat) milk. Blood was drawn at regular intervals during 72 hours.

The researchers found that participants with MetS had lower baseline plasma α-tocopherol and greater oxidized low-density lipoprotein, interleukin (IL)-6, IL-10, and C-reactive protein (P $_6$-α-tocopherol bioavailability, regardless of health status. Compared with healthy participants, MetS participants had lower estimated d_6-α-tocopherol absorption. In addition, they had lower plasma d_6-α-tocopherol area under the curve from zero to 72 hours, lower maximal concentrations, and slower rates of plasma disappearance.

"These findings support higher dietary α-tocopherol requirements for MetS adults," the authors write.

More information: Abstract
Full Text (subscription or payment may be required)