

# Alpha-tocopherol bioavailability lower in metabolic syndrome

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(HealthDay)—For adults,  $\alpha$ -tocopherol 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  $\alpha$ -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- $\alpha$ -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  $\alpha$ -tocopherol and greater oxidized low-density lipoprotein, interleukin (IL)-6, IL-10, and C-reactive protein (P  $\alpha$ -tocopherol bioavailability, regardless of health status. Compared with healthy participants, MetS participants had lower estimated d<sub>6</sub>- $\alpha$ -tocopherol absorption. In addition, they had lower plasma d<sub>6</sub>- $\alpha$ -tocopherol area under the curve from zero to 72 hours, lower maximal concentrations, and slower rates of [plasma](#) disappearance.

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

**More information:** [Abstract](#)  
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