

FEEDING STUDIES OF DIETARY DIACYLGLYCEROL OIL IN NORMAL AND  
LIPOPROTEIN LIPASE-DEFICIENT CATS

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ABSTRACT

Diacylglycerol (DAG) oil has been investigated in humans and animals as a potential therapy for hypertriglyceridemia and related disorders. DAG oil was evaluated in healthy cats and in a feline model of hypertriglyceridemia as a result of lipoprotein lipase (LPL) deficiency. In the first study, eight adult cats were offered a commercial dry diet enriched with either DAG or triglyceride (TAG) oil (48% metabolizable energy [ME] from fat) in a two-bowl palatability feeding trial. After 14 days, total food intakes were similar (DAG diet  $470 \pm 52$  g, TAG diet  $380 \pm 88$  g,  $P = 0.4$ ). Both diets were well-accepted and no changes in health or fecal quality were observed. In the second study, eleven adult LPL-deficient male cats were fed a semipurified diet containing either DAG or TAG oil as the sole fat source (25% ME) in a crossover design for 8 days each after a 21-day acclimation period. Serum concentrations of TAG, cholesterol, and nonesterified fatty acids were measured on days 6, 7, 8 and days 14, 15, 16. No significant effects were observed on any measurements, and a reduction in hypertriglyceridemia was not demonstrated (DAG:  $3282 \pm 400$  mg/dl, TAG:  $3001 \pm 302$  mg/dl). Dietary fat source did not significantly affect food intake, body weight, fecal quality, or general health. Further studies of DAG oil in cats are needed to evaluate long-term safety and benefits.