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1: [J Clin Endocrinol Metab.](#) 1995 Jan;80(1):239-43.

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## Assimilation and mobilization of triglycerides in subcutaneous abdominal and femoral adipose tissue in vivo in men: effects of androgens.

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Studies on regional differences of adipose tissue metabolism have mainly been performed in vitro. To allow measurements of lipid uptake in vivo in man, radioactive label from [9,10-3H]oleic acid in 80 g orally administered milk fat was measured after 4 h in abdominal and femoral sc adipose tissues in 28 middle-aged, abdominally obese men. Radioactivity was measured in adipose tissue triglycerides extracted from needle biopsies. Lipoprotein lipase (LPL) activity was also measured. Uptake of label in triglycerides and LPL activity were higher (20% and 15%, respectively;  $P < 0.05$ ) in the abdominal compared to the femoral adipose tissue region. The men were then randomly assigned to three groups, receiving testosterone (T), dihydrotestosterone, or placebo, for 9 months. After 2 months of treatment, the procedure of administration of label was repeated, this time using [U-14C]oleic acid as a marker. Measurements of radioactive label was then performed after 4 h and monthly up to 7 months. Supplementation with T was followed by an inhibited uptake of label in triglycerides (34%;  $P < 0.05$ ), lower LPL activity (48%;  $P < 0.05$ ), and a shorter  $t_{1/2}$  (30%;  $P < 0.05$ ) in the abdominal adipose tissue region compared with the dihydrotestosterone and placebo groups. No significant effect of T on triglyceride uptake, LPL activity, or  $t_{1/2}$  was found in sc femoral adipose tissue. It was concluded that the turnover rate of depot triglycerides is more rapid in abdominal compared to femoral sc adipose tissue in men. Furthermore, T supplementation inhibits triglyceride uptake and LPL activity and causes a more rapid turnover of triglycerides only in the sc abdominal adipose tissue region. These results demonstrate the marked effects of T on adipose tissue metabolism in vivo and suggest that T is an important regulator of the proportion of depot fat mass in central and peripheral adipose tissue in men.

Publication Types:

- [Clinical Trial](#)
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PMID: 7829619 [PubMed - indexed for MEDLINE]

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