

## Effect of nutritional supplements on dietary macronutrient intake in patients with cirrhosis of the liver

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Malnutrition occurs in >30% of patients with cirrhosis of the liver. Oral nutritional supplements may be used as therapy. However, it is not known whether supplements add to or replace usual dietary intake of energy and nutrients. The aim of the present study to determine the effect of nutritional supplements on the usual dietary intakes of malnourished patients with cirrhosis.

Malnourished patients (nitrogen index <90% expected) were randomly assigned to receive supplements of 600 kcal/40g protein with minerals and vitamins ('active') or minerals and vitamins only ('placebo') in a single-blind manner. Supplements were taken as drinks three times daily. Compliance, assessed by a sachet count, was >75% in all patients. Dietary intake was assessed using a prospective four day food record prior to and in the 6th and 18th weeks during therapy. Intakes of energy, protein, fat and carbohydrate (CHO) were analysed via a computerised dietary analysis programme (Xyris) using the Australian foods data base.

Fifteen patients (13 men) in the active arm and 10 (nine men) in the placebo arm were studied. The groups were well matched for age, weight, body mass index (BMI) and aetiology of disease. There was no significant difference in dietary intakes between the groups at baseline or at six or 18 weeks. Changes in dietary intakes at 18 weeks compared with that at baseline are shown (mean  $\pm$  sem) in the Table.

	Active	Control
Energy (kcal)	-93 $\pm$ 84	175 $\pm$ 196
Protein (g)	-5.6 $\pm$ 5.8	9.7 $\pm$ 5.8
Fat (g)	13.5 $\pm$ 5.4*	10.9 $\pm$ 10.6
CHO (g)	8.1 $\pm$ 11.4	12.6 $\pm$ 28.0

\* p = 0.03

Only a trivial decrease in fat intake (mean reduction of 18  $\pm$  7%, P<0.02) was associated with ingestion of energy rich supplements. No change in any of the indices was seen at six weeks.

In conclusion we found that, in malnourished patients with cirrhosis, energy-rich nutritional supplements do not affect usual dietary intake and add to the intake of energy and macronutrients.