

## The NUT study: what effect does nutritional intervention have on energy intake in patients with gastrointestinal cancer receiving chemotherapy?

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Gastrointestinal cancer can lead to weight loss and detrimental effects on nutritional status that are often exacerbated by the acute consequences of chemotherapy. Cancer patients with weight loss before chemotherapy are more likely to have a poorer treatment outcome<sup>(1)</sup>. It has been suggested that weight gain can improve treatment outcome and quality of life. The effect of different types of nutritional interventions on energy intake has not been extensively investigated in cancer patients receiving chemotherapy. This study aimed to investigate the effect of different nutritional interventions on weight and energy intake in this patient population.

Patients with gastrointestinal cancer with weight loss undergoing palliative chemotherapy were randomised into one of four groups: (1) no dietary intervention; (2) dietary advice only; (3) oral nutritional supplementation (ONS) only; and (4) dietary advice and ONS. The patients were actively monitored by a dietitian between baseline (prior to chemotherapy) and 6 weeks (after the start of chemotherapy). Body weight was measured and 3-d food diaries were completed at baseline, 6 weeks and at 12 weeks to track longer-term impact. In total, 236 patients were eligible for inclusion; however, only thirty-one patients returned food diaries at all three time points and were included in this analysis.

A repeated measured ANOVA showed that energy intake in each of the four groups changed significantly over the 12-week period ( $P=0.004$ ), by increasing during the first 6 weeks of close dietetic monitoring, followed by a return to baseline values (see Table). The change in energy intake was not significantly different between the four groups ( $P=0.956$ ). There were no significant differences between groups with regards to change in macronutrient intake ( $P>0.05$ ) and body weight ( $P=0.546$ ) over the 12 weeks.

Energy intake (kJ/d)	Baseline		6 weeks		12 weeks	
	Mean	SD	Mean	SD	Mean	SD
No dietary intervention ( <i>n</i> 11)	8192	3753	9958	3176	9506	2669
Dietary advice ( <i>n</i> 6)	7435	3109	8916	1987	8121	2745
ONS ( <i>n</i> 5)	8004	3640	9347	2230	8711	2782
Dietary advice and ONS ( <i>n</i> 9)	9100	3088	11 134	3025	9573	2573

This study demonstrated that energy intake changed significantly; however, this did not correspond to a change in weight in the participants. Similar increases in energy intake were seen in the non-intervention and intervention groups. No significant benefit was found in energy intake or weight when dietary advice and ONS were provided in combination or alone.

1. Andreyev HJN, Norman AR, Oates J & Cunningham D (1998) *Eur J Cancer* 34, 503–509.