



High-protein oral nutritional supplement use in patients with cancer reduces complications and length of hospital stay: a systematic review and meta-analysis

Delsoglio M, Capener R, Smith TR, Donald M, Hubbard GP and Stratton RJ (2025) *Front. Nutr.* 12:1654637.

1. BACKGROUND

Malnutrition affects up to **85%** of people with cancer and worsens:



Treatment tolerance



Recovery



Survival

Protein needs in these patients are often elevated and many patients struggle to meet these targets. Oral nutritional supplements (ONS) can bridge this gap, and those providing $\geq 20\%$ of total energy from protein (HPONS) may be particularly beneficial.

2. METHODS

A systematic review (searches to January 2025) investigated the effect of HPONS vs standard care, dietary advice and standard ONS on clinical outcomes:

- Complications
- Hospital stay
- Readmissions
- Mortality

in adults with cancer.



3. RESULTS



32
publications

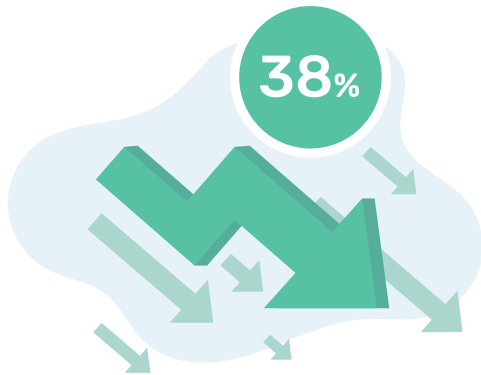
were identified reporting results from 29 randomised controlled trials (RCTs) (n = 2,279) of HPONS¹ alongside dietary intake in patients with gastrointestinal (GI), lung, head and neck, liver, breast, and mixed cancers across hospital and community undergoing surgery, chemotherapy, and/or radiotherapy.



1. Mean daily intake 580 kcal, 34 g protein, ranging from 5 to 365 days



4. THE KEY FINDINGS



Complications ↓ **38%**

15 RCTs (n = 1,230) showed **fewer infectious, non-infectious post-operative, and treatment-related complications** with HPONS vs. control (OR 0.62 [95% CI 0.48 to 0.81], p = 0.0005). **101 fewer complications** per 1,000 patients;

Number Needed to Treat = 12.



Both omega-3-enriched and non-enriched HPONS showed a positive significant effect on complications.



Length of hospital stay ↓ 0.26 days on average (8 RCTs n = 865, -0.26 [95% CI -0.49 to -0.03], p = 0.02).

No difference in hospital readmissions and mortality.

Further research with robust controlled designs, and greater standardisation of patient groups, cancer treatment regimens and nutritional interventions, is recommended to further improve the evidence base to enable recommendations for practice.



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