

## CLINICAL SUMMARY

# Oral Nutritional Supplements Can Reduce Risk of Hospital Readmission Among Older Acutely Ill Patients

This study shows that oral nutritional supplementation of acutely ill patients improves nutritional status and reduces the number of non-elective readmissions.

The proportion of patients readmitted to the hospital at 6 months was significantly lower in patients randomly assigned to nutritional supplements (29%) compared with those in the placebo group (40%) ( $P<.05$ ).

Populations around the world are aging. Thus, age-associated undernutrition and chronic diseases are becoming increasingly common, as are the outcomes associated with them—for instance, increased length of hospitalizations and increased risk for readmission.

Recent research has shown that protein-energy undernutrition is a strong predictor of in-hospital and post-discharge clinical outcomes and that supplementing at-risk patients such as the elderly with protein and energy can shorten length of hospital stay. Based on these studies, a research team designed a double-blind, placebo-controlled, randomized trial to assess whether nutritional support of older patients during acute illness and continuing through convalescence could improve clinical outcomes.\*

The researchers randomized 445 hospitalized patients aged 65 to 92 years to one of two groups: one received the normal hospital diet plus two oral supplements a day ( $n=223$ ), the other received the normal hospital diet plus a placebo ( $n=222$ ). The supplement supplied 995 kcal of energy and 100% of the Reference Nutrient Intakes for vitamins for a healthy older person.

Elderly patients with poor nutritional status during the first month after hospitalization have been shown to be at a much higher risk of non-elective readmission.

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The placebo was similar to the supplement but did not contain protein and micro-nutrients and provided 60 kcal. The intervention lasted 6 weeks and the follow-up lasted 6 months.

At 6 months, the researchers analyzed five outcome measures—disability, length of hospital stay, readmission, morbidity, and mortality. The table below shows the effects of supplements compared to placebo on the main outcome measures.

These results show that providing a nutritional supplement to acutely ill older people can significantly improve certain biomarkers of nutritional status (eg, serum albumin levels) and reduce non-elective 6-month hospital readmission rates. The research team suggests that widespread implementation of this intervention strategy could have a substantial economic impact and improve the quality of life for older people.

**Table: Effects of Supplements on Main Outcome Measures**

Outcome Measure		Placebo		Supplements		P Value
		No.	Mean (SD)	No.	Mean (SD)	
Nutritional	Body Mass Index	106	26 (4)	119	26 (4)	.6
	Body weight (kg)	106	69 (13)	119	69 (14)	.9
	MUAC (cm)	106	28.6 (3)	119	28.3 (4)	.4
	TSF (mm)	106	15.6 (7)	119	15.3 (6)	.9
	Serum albumin (35-55 g/L)	106	40.5 (4)	119	42 (4)	.04
	Serum transferrin (2-4 g/L)	106	2.59 (0.6)	119	2.4 (0.5)	.3
Clinical	Barthel score	223	18.6 (3)	222	18.3 (3)	.9
	Length of stay (d)	223	10.1 (8)	222	9.4 (7)	.2
	No. of infections	223	26 (12%)	222	21 (10%)	.4
	No. of readmissions	223	89 (40%)	222	65 (29%)	.02
	No. of deaths	223	19 (9%)	222	32 (14%)	.1

SD = standard deviation, MUAC = mid upper arm circumference, TSF = triceps skinfold

## NUTRITION CONCLUSION

Oral nutrition supplementation of acutely ill patients can improve nutritional status and lead to a significant reduction in the number of non-elective readmissions, thus improving overall quality of care.