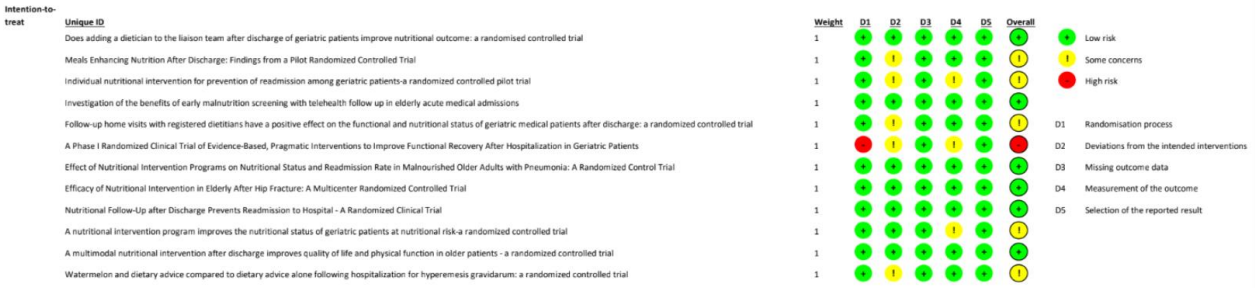

Supplementary Figure 1 Risk of bias assessment for studies (intention-to-treat analysis).

Supplementary Figure 2 Risk of bias assessment for studies (per-protocol analysis).

Supplementary Table 1 Summary of study characteristics

Ref.	Type of study, patient demographics and number	Nutritional Intervention	Comparator/control group	Results and conclusions
Follow-up counselling by clinical nutritionists or dietitians				
Beck *et al*[14]	RCT. Geriatric patients (> 75), n = 71	A discharge Liaison-Team in cooperation with a dietician. Dietician performed a total of three home visits with the aim of developing and implementing an individual nutritional	All included patients were followed home by the discharge Liaison-Team. However, for comparator group, the team did not	Readmission Outcomes: 6 months. Results: Hospitalization was significantly lower (P=0.017) in the intervention group six months after trial start. The positive trend was already observed 12 weeks after start. The odds ratio for re-/hospitalization within 6 months

		care plan	include the dietician	was 0.367 [0.129; 1.042]. Conclusions: Adding a dietician to the discharge Liaison-Team after discharge of geriatric patients may reduce the number of times hospitalized within 6 months
Blondal *et al*[19]	Secondary Analysis of RCT. Geriatric patients (> 65), *n* = 106	The clinical nutritionist provided the intervention group with nutrition therapy during five home visits (conducted the day after hospital discharge and at one, three, six, and twelve weeks from discharge). Participants received three separate phone calls from the clinical nutritionist at weeks two, five, and nine after hospital discharge to encourage adherence to the nutrition therapy. The nutrition therapy followed the standards of the Nutrition Care Process, which entails assessing a patients nutritional status, diagnosing their nutritional problem/s,	At discharge from hospital, the control group was provided with information on proper nutrition for older adults, and was encouraged to order Meals on Wheels (MOW), as both recommendations reflect the current standard of care in Iceland when discharging older adults at risk of malnutrition. The control group did not receive any further nutritional care or service by the hospital, primary care sector	Readmission Outcomes: 1 month, 6 months, 12 months, 18 months. Results: Intervention group had a lower proportion of participants with at least one readmission compared to control (1 month: 1.9% vs 15.8%, P=0.033; 6 months: 25.0% vs 46.2%, P=0.021; 12 months: 38.5% vs 55.8%, P=0.051; and 18 months: 51.9% vs 65.4%, P=0.107). There was also a lower total number of readmissions per participant (1 month: 0.02 vs 0.19, P=0.015; 6 month: 0.33 vs 0.77, P=0.014; 0.62 vs 1.12, P=0.044) and a shorter LOS (1 month: 0.02 vs 0.92, P=0.013; 6 months: 2.44 vs 13.21; P=0.006; 12 months: 5.83 vs 19.40, P=0.034; 18 months: 10.42 vs 26.00, P=0.033) in the intervention group. However, there were no differences between groups in ER visits, mortality and need for long-term care residence. Conclusions: Six-month nutrition

		suggesting appropriate nutritional treatment, monitoring that the problem improves/resolves, and lastly, evaluating the treatment suggested. The participants also received, free of charge, energy- and protein-rich cooked traditional foods (at least one hot meal daily and two snacks; Supplemental table 1) and ONS	and community. The participants in the control group did not receive dietary counselling or provision of food by the study team during the study period	therapy in older Icelandic adults discharged from hospital reduced hospital readmissions and shortens LOS at the hospital up to 18-months post-discharge. However, it did not affect mortality, ER, nor need of long-term care residence in this group
Cramon *et al*[24]	Pilot RCT. Geriatric patients, *n* = 40	The nutritionists conducted two visits to the patients' homes in the course of the 4 weeks subsequent to discharge. Patients received follow-up phone calls between visits, if necessary. The nutrition plan was based on an individual nutritional assessment performed by the nutritionist	The patients in the control group received standard treatment and were offered nutritional guidance after the last follow-up	Readmission Outcomes: 1 month. Results: There is no difference in readmission between the intervention group and control group 30 days after discharge (29% vs 11%, P=0.24). Conclusions: Individual nutritional intervention did not prevent readmission among geriatric patients in this trial. Recruitment procedures functioned well, and the intervention was well accepted by the patients
Sharma *et al*[23	- RCT - Geriatric patients	Individualized nutrition care plan and monthly post-discharge telehealth	Patients randomized to the control group	Readmission Outcomes: 1 month, 3 months, 6 months. Results: There is no significant difference in

]	- n=148	follow-up	followed usual care currently operative in Flinders Medical Centre. It is an expectation that all patients are screened for malnutrition by using the MUST tool by the admitting nurse and patients identified as high risk are referred to the dietitian. Dietetic input occurs only if patients are flagged as high risk and referred by a health care professional with no dedicated outpatient follow-up after discharge. In this study, the control patients were flagged as malnourished and this was documented in the case notes but	complication rate during hospitalization, QoL and mortality at 3-months or readmission rate at 1, 3 or 6 months following hospital discharge. Conclusions: There is no significant difference in complication rate during hospitalization, QoL and mortality at 3-months or readmission rate at 1, 3 or 6 months following hospital discharge	

			unlike the intervention group the research dietitian did not refer them to the ward dietitian for nutrition intervention. However, in case the ward dietitian received referral for these patients, then they were allowed to follow the same intervention until hospital discharge but did not receive any additional post-discharge telephone follow-up	
Wyers *et al*[21]	RCT. Geriatric patients (> 55), *n* = 152	Weekly dietetic consultation, energy-protein-enriched diet, and ONS (400 mL per day) for 3 months	Control patients received usual nutritional care as provided in the hospital, rehabilitation clinic, or at home, that is, dietetic	Readmission Outcomes: 3 months, 6 months. Results: Intervention improved nutritional intake/status at 3, but not at 6 months, and did not affect any other outcome (did not affect readmissions). Conclusions: Intensive nutritional intervention after hip fracture did not improve

			advice or ONS were only provided if prescribed by the medical doctor in charge	clinical outcomes (did not affect readmissions)
Lindegaard Pedersen *et al*[20]	RCT. Geriatric patients (> 75), *n* = 208	Individualized nutritional counselling of the patient and the patient's daily home carer by a clinical dietician one, two, and four weeks after discharge from hospital. The counselling was either in-person at the patient's homes, or over the telephone	During hospital stay, all patients received standard care, which encompasses a multi-professional, comprehensive geriatric care (CGC) including nutritional care. The nutritional care comprised estimates of energy and protein needs (20), nutritional therapy and recording of food and fluid intake (21). Standard care also included discharge arrangements with the home care provider, such as	Readmission Outcomes: 1 month, 3 months. Results: PP analysis revealed that the risk of readmission was significantly lower in the home visit group compared to the control group and the telephone consultation group compared to the control group, and this was evident at 30 days as well as at 90 days after discharge. Conclusions: Individualized nutritional follow-up performed as home visits seems to reduce readmission to hospital 30 and 90 days after discharge. Intervention by telephone consultations may also prevent readmission, but only among participants who receive the full intervention

			meal service, food delivery, and home care. The patients received an individual diet plan, including three daily meals, three between-meal snacks, supplements, and instructions for implementing the plan according to their individual preferences	
Mun k *et al*[22]	RCT. Geriatric patients, *n* = 191	Dietetic counselling including a recommendation of daily training, an individual nutrition plan and a package containing foods and drinks covering dietary requirements for the next 24 h. Further, a goodie-bag containing samples of protein-rich milk-based drinks were provided. Information regarding recommendations of	The control group (CG) received standard care at discharge following the standard procedure for ward discharge of patients. This entailed no systematically nutritional intervention; however brief dietary counselling	Readmission Outcomes: 6 months. Results: No significant difference was seen in readmissions within 6 month (IG: 45% vs. CG: 45%, Risk Ratio (RR): 0.96 0.71-1.31, p = 0.885). Conclusions: The present study, using a multimodal nutritional approach, revealed no significant effect on readmissions however a significant positive effect on nutritional status, quality of life and physical function was found

		nutritional therapy after discharge was systematically and electronically communicated to the municipality. The dietician performed telephone follow-ups on day 4 and 30 and a home visit at 16 weeks	might be provided at the discretion of the individual clinician. After 16 weeks the CG received a home visit to collect data, but no dietetic counselling was performed	
Individualised meals thrice a day (as evaluated and enhanced by dietitian)				
Buys *et al*[25]	Pilot RCT. Geriatric patients (> 65), *n* = 21	In addition to usual care and receipt of What's On Your Plate: Smart Choices for Healthy Aging, the intervention group received three meals per day for 10 days. Meals were based upon National Institute on Aging's (NIA) recommendations from What's On Your Plate: Smart Choices for Healthy Aging21 and the Academy of Nutrition and Dietetics 2012 Position Statement on Food and Nutrition for Older Adults living in the	Control participants received the care or treatment as prescribed by their attending physician or nurse practitioner (usual care) and the "What's On Your Plate? Smart Food Choices for Healthy Aging" book created by the National Institute on Aging	Readmission Outcomes: 1 month. Results: Among participants in the intervention group, three (27.7%) were readmitted to the hospital within 30 days of discharge compared with one participant (8.3%) in the control group (p=0.59). This study did not show any statistical differences in hospital readmission, however. In fact, more participants from the intervention group were readmitted to the hospital compared with the control group. While this may be explained by the small sample size, it may also, in part, be explained by other circumstances such as severity of diagnosis and complications from comorbid illnesses, which were not

	community. Menus already being used by the kitchen were evaluated by a registered dietitian and health behavior expert, and additional meals were added to the menu for the kitchen staff to use in preparing foods for these participants. The dietitian helped design these meals to enhance the menu		measured or adjusted for in this study. In fact, the primary difference may have been related to the fact that the intervention group had more persons with diabetes; after enrollment in the study, staff learned of two participants who had diabetes and suffered from related complications which led to their rehospitalization. Because investigators did not randomize or stratify according to disease severity or comorbidity, the randomization scheme did not adjust for these. Future studies would benefit from accounting for such relevant comorbidities using stratified randomization schemes. Conclusions: Conducting a randomized controlled trial to assess outcomes of providing home-delivered meals to older adults after hospital discharge in partnership with a small nonprofit organization is feasible and warrants future research. This study did not show any statistical differences in hospital readmission
Individualised nutrition care plans			
Beck	RCT.	For patients randomized	For all patients, the Readmission Outcomes: 6 months.

et al[28]	Geriatric patients (> 65), *n* = 152	to nutritional intervention the registered dietitians performed a comprehensive nutritional assessment at the first home visit as a basis for developing a nutrition care plan consistent with estimated nutritional requirements and nutritional rehabilitation goals. All in all, it was planned that the registered dietitians should perform three home visits approximately one, three and eight weeks after discharge, to perform dietetic care and maximize participants' nutritional status by way of reviewing the nutrition care plan, dietary counselling, motivation and education, monitoring participant weight, and ensuring energy and protein requirements were achieved. If it was	discharge follow-up by GPs was planned to consist of three contacts, conducted approximately one, three and eight weeks after discharge in both control and intervention participants	Results: Odds ratio for re-admission after 26 weeks was 1.62 (95% confidence interval (CI) 0.85 to 3.10). Conclusions: Follow-up home visits with registered dietitians have a positive effect on the functional and nutritional status of geriatric medical patients after discharge. A larger study with a longer intervention period is needed to see if there is a positive effect on risk of re-admission and mortality

		considered relevant, the participants received short follow-up consultations by telephone by the registered dietitians in order to give advice and to stimulate compliance to the proposed nutritional intake (between the home visits)		
Yang *et al*[26]	RCT. Geriatric patients, *n* = 82	Individualized nutritional intervention program, according to energy and protein intake requirements in addition to dietary advice based on face-to-face interviews with their family caregivers during hospitalization, with phone calls post-discharge for prescribing individualized nutritional intervention program (iNIPs)	The SC group was only provided standard nutritional supplements according to the Kaohsiung Chang Gung Memorial Hospital Nutrition Department, and patients' family caregivers were not provided dietary advice	Readmission Outcomes: 6 months. Results: The 6-month readmission rate for pneumonia significantly decreased by 77% in the NI group compared with that in the SC group (p = 0.03, OR: 0.228, 95% CI: 0.06-0.87). Conclusions: A six-month iNIP under dietitian and patient family nutritional support for malnourished older adults with pneumonia can significantly improve their nutritional status and reduce the readmission rate
Terp *et al*[27]	RCT. Geriatric patients, *n* = 144	Individual dietary plan for home, including pre-discharge advice on nutritional intake,	Patients in the control group received usual care, which meant	Readmission Outcomes: 3 months. Results: No significant difference between groups was found in functional status, mortality, or

	combined with three follow-up visits after discharge (one, four, and eight weeks)	screening for nutritional risk within 24 hours of hospital admission using NRS-2002 and weekly monitoring of their nutritional status. The nursing staff completed the screening for nutrition risk. The clinical dietician was involved in the process if the patient had specific needs and gave dietary advices and prepared a dietary plan for nutrition intake while they were hospitalized. At discharge, any nutritional problems were documented in the discharge summary, but no follow-up on the patients who were at nutritional risk	readmission rates. Conclusions: There is no effect on readmissions noted

		was planned		
Oral nutritional supplementation (with whey protein)				
Deer *et al*[29]	RCT. Geriatric patients, *n* = 100	Enrolled patients were consented, stratified by gender, and randomized into one of five post-hospital interventions: (i) whey protein supplementation, (ii) in-home rehabilitation with placebo supplementation, (iii) in-home rehabilitation with protein supplementation, (iv) single testosterone injection, or (v) isocaloric placebo supplementation, the control group	Enrolled patients were consented, stratified by gender, and randomized into one of four post-hospital interventions. The control group received an isocaloric placebo supplementation together with usual care	Readmission Outcomes: 1 month. Results: The 30-day readmission rate was highest in the placebo group (28%), followed by rehabilitation + placebo (15%), whey (12%), rehabilitation + whey (11%), and testosterone (5%). There were no significant differences in readmission rates across groups. However, there was a trend for lower readmission rate in AIG (11%) compared with the placebo group (28%), p = .065. Readmission rates tended to be improved across groups (p = .09) and in AIG compared with placebo group (p = .06). Conclusions: Post-hospital protein supplementation, in-home exercise, and testosterone interventions are safe, can accelerate recovery, and may reduce readmission rates in geriatric patients
Diet supplementation with watermelon				
Tan *et al*[30]	RCT. Pregnant patients, *n* = 128	Participants randomized to watermelon and dietary advice leaflet were supplied with two	Participants randomized to advice leaflet were provided with an	Readmission Outcomes: 2 weeks. Results: Rehospitalization for HG and antiemetic usage were not significantly different. Conclusions:

	fresh red-fleshed watermelon (approximately 4 kg weight) to take home in addition to the dietary advice leaflet which they were advised to read and heed	identical advice leaflet to read and heed	Adding watermelon to the diet after hospital discharge for HG improves bodyweight, HG symptoms, appetite, wellbeing and satisfaction (no effect on hospitalisation)

Supplementary Table 2 Risk of bias assessment summary, *n* (%)

Domains		**Assessment (out of 13 total trials)**			**Justifications for having some concerns or high risk of bias during assessment**
		High risk	**Some concerns**	**Low risk**	
1	Risk of bias arising from the randomisation process	1 (7)	0 (0)	12 (92)	Randomisation process was not outlined at all
2	Risk of bias due to deviations from the intended interventions (effect of assignment to intervention or effect of adhering to intervention)	0 (0)	6 (46)	7 (54)	Most trials were unblinded; both patients and care providers were aware of the patient status due to inability to blind receipt of intervention
3	Risk of bias due to missing outcome data	0 (0)	0 (0)	13 (100)	-
4	Risk of bias in measurement of the outcome	0 (0)	4 (31)	9 (69)	Many trials did not blind assessors of the outcome

5	Risk of bias in selection of the reported result	0 (0)	0 (0)	13 (100)	-
Overall		1 (7)	6 (46)	6 (46)	-