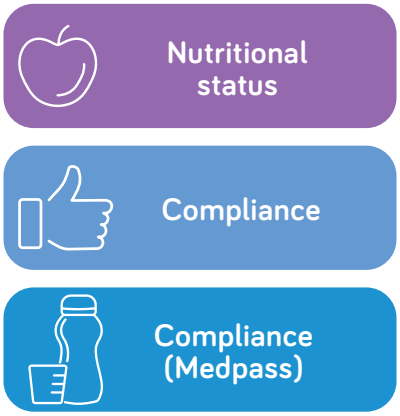
NUTRICIA
LIFE-TRANSFORMING NUTRITION

Fortisip® Compact Range
Oral Nutritional Supplements (ONS)
Evidence Booklet 2023

This information is intended for healthcare professionals only

INTRODUCTION

Malnutrition is a widespread problem affecting the lives of millions of people worldwide each year.[1,2] Older people are particularly at high risk of malnutrition, especially when disease is present.[3] Oral Nutritional Supplements (ONS) are effective solutions which are used in malnourished patients to address nutritional gaps when food alone is not sufficient.[4] This booklet summarises studies that demonstrate the benefits of ONS using the Fortisip® Compact Range (Fortisip® Compact Protein, Fortisip® Compact and Fortisip® Compact Fibre), in a variety of health and social care settings.



CONTENTS

Ready-made oral nutritional supplements improve nutritional outcomes and reduce health care use—A randomised trial in older malnourished people in primary care.

Smith TR et al. 2020

BACKGROUND:

Disease related malnutrition (DRM) is common in free living older people. Approximately 3% of free-living older patients in the UK are malnourished, with many more at risk of malnutrition.[1-3] However, there is little research investigating nutritional interventions for the dietary management of DRM in the primary care setting, where general practitioners (GPs) are usually the first line healthcare professional (HCP) for DRM management.

This trial is the first large, randomised control trial undertaken in malnourished free-living older patients, recruited through their GPs to evaluate the efficacy of oral nutritional supplements (ONS) and dietary advice (DA) compared with dietary advice alone.

Products used:

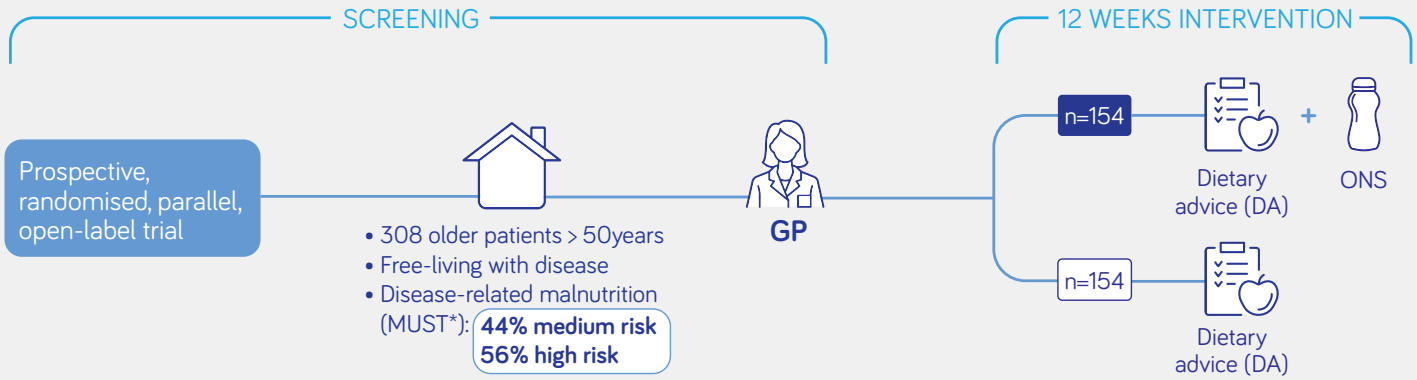
Fortisip® Compact Protein
125mL containing 300Kcal, 18g protein and micronutrients

Fortisip® Compact
125mL containing 300Kcal, 12g protein and micronutrients

Fortijuce®
200mL containing 300Kcal, 8g protein and micronutrients

Fortisip® Compact Protein, Fortisip® Compact and Fortijuce® are all foods for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

STUDY METHODOLOGY:



*Malnutrition Universal Screening Tool

KEY FINDINGS:

Nutrition intervention with Fortisip® Compact range or Fortijuce® (when milk disliked) and dietary advice in free-living older patients:

Significantly improved total energy (+401kcal*, +436kcal**) **and protein intakes** (+15g*, +19g**) with minimal appetite suppression (P <0.001)

Reduced malnutrition risk in 55% of individuals in the ONS + DA group compared to only 37% in the DA group

Significantly increased body weight (+1.5kg*, +1.4kg**) during the 12 weeks intervention

Significantly reduced healthcare use, compared to DA alone:

- Emergency hospital admissions reduced by 50%
- Length of stay reduced by 62%
- GP visits reduced by 34%

Highly accepted:
High acceptance to ONS (96%) reported

* when ITT analysis used, ** when PP analysis used

CONCLUSION:

- ONS improved nutritional status and reduced healthcare use with potential cost savings in older people with DRM, living in the community
- ONS were highly acceptable and made a difference to patients

Smith TR, Cawood AL, Walters ER, Guildford N, Stratton RJ. Ready-made oral nutritional supplements improve nutritional outcomes and reduce health care use—A randomised trial in older malnourished people in primary care. Nutrients. 2020 Feb; 12(2):517.

Note: for citations on this page, please see the reference section at the end of the document.

Economic impact of implementing malnutrition screening and nutritional management in older adults in general practice.

Brown F et al. 2020

BACKGROUND:

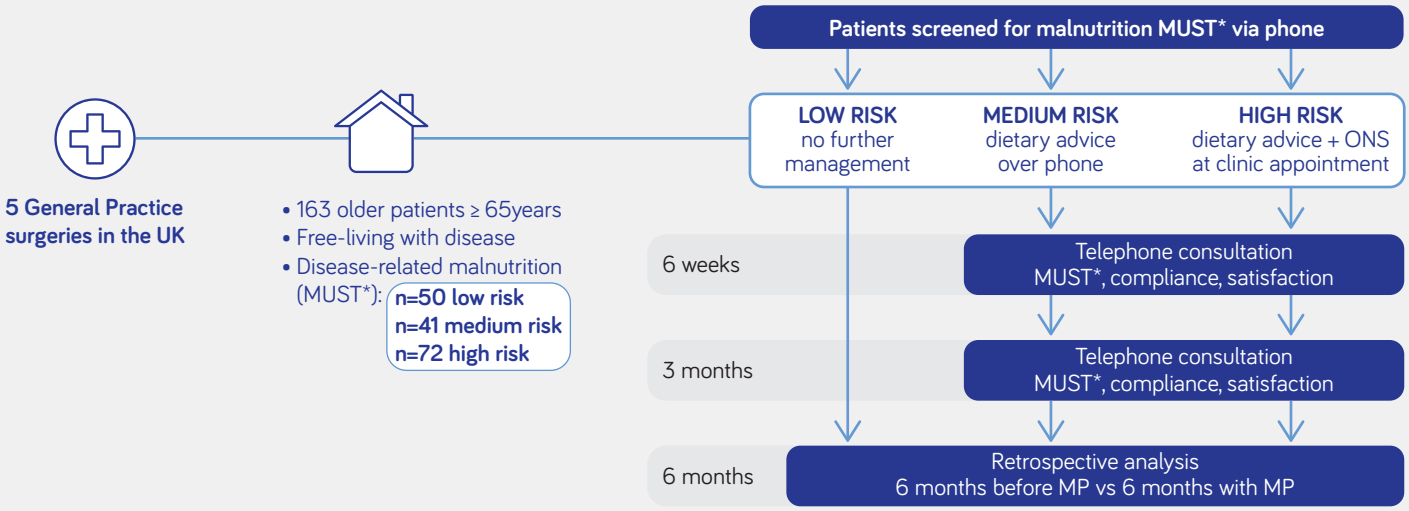
Disease related malnutrition (DRM) is a common public health problem affecting both the patient and the healthcare system.[1] The UK professional body endorsed 'malnutrition pathway' (MP) is a practical guide to assist healthcare professionals in identifying and managing adult malnutrition, including the appropriate use of oral nutritional supplements (ONS) in the community. Appropriate malnutrition management can lead to significant savings on healthcare costs. This service evaluation investigated the outcomes of implementing the pathway from an economic, acceptability and malnutrition risk perspective.

Product used:

Fortisip® Compact Protein
125mL containing 300Kcal, 18g protein and micronutrients

Fortisip® Compact Protein is a food for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

STUDY METHODOLOGY:



*Malnutrition Universal Screening Tool

KEY FINDINGS:

Application of suitable malnutrition management in free-living older patients resulted in:

Significant reductions in:

- Hospital admissions by 49% (P = 0.028)
- Length of stay by 48% (P = 0.05)
- Visits to GP by 21% (P = 0.07)
- Prescription of antibiotics by 30% (P = 0.05)

Potential cost savings:
An overall cost saving of almost £400 (approx. $713 AUD/ $768 NZD*) per patient over 6 months can be achieved, accounting for the costs of implementing the pathway

Fewer patients at risk of malnutrition:
53% of patients moved from the high-risk group to low risk or medium risk

Patients were satisfied with the nutrition support they received (96% for ONS) and high adherence (90%) to ONS was reported.

Notes: 1. Patients were reviewed at 6 weeks, 3 and 6 months with nutritional data, compliance and satisfaction recorded.
2. Healthcare resource use data was obtained from patient records for the 6 months before and after the implementation of the pathway
*Exchange rate on 19 January 2023: £1 = AUD1.79/NZD 1.92

CONCLUSION:

Implementation of the 'Malnutrition Pathway', which includes ONS for patients at high risk of DRM, improved nutritional status and reduced healthcare use with potential cost savings in older people with DRM living in the community.

Brown F, Fry G, Cawood A, Stratton R. Economic impact of implementing malnutrition screening and nutritional management in older adults in general practice. J Nutr Health Aging. 2020 Feb;24(3):305-311

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Effect of sit-to-stand exercises combined with protein rich oral supplementation in older persons: The older person's exercise and nutrition study.

Grönstedt H et al. 2020

BACKGROUND:

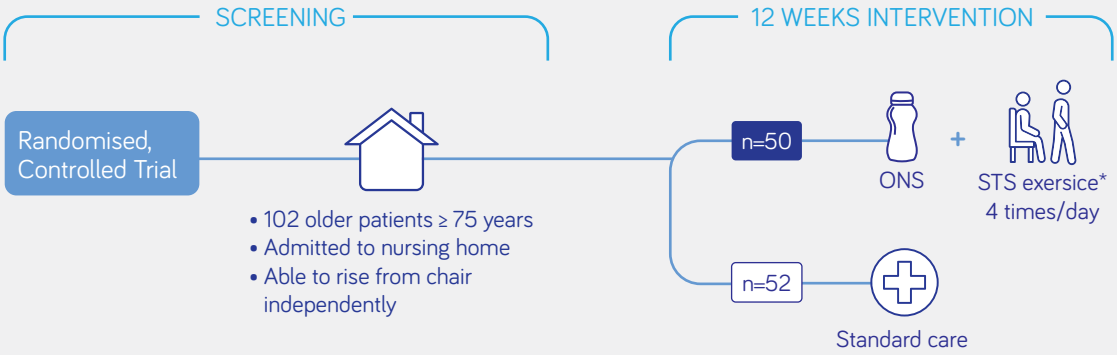
Sarcopenia, malnutrition and frailty are prevalent among nursing home residents[1] and are associated with reduced physical function[2] and quality of life (QOL).[3] Both nutritional[3] and exercise interventions[4] have been proven effective in improving physical function and nutritional status in older adults thus supporting physical performance and independence. The OPEN study was conducted in eight nursing homes in Sweden to investigate the combined effects of high protein, low volume oral nutritional supplements (ONS) with sit to stand exercise (STS) on nutrition status, body composition and physical function in older residents.

Product used:

Fortisip® Compact Protein
125mL containing 300Kcal, 18g protein and micronutrients

Fortisip® Compact Protein is a food for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

STUDY METHODOLOGY:



*Sit-To-Stand (STS) exercise: the older person gets up from a chair to stand and sit down again repeatedly for 1 to 10 times per session, depending on the individual's ability.

KEY FINDINGS:

Nutrition support with Fortisip® Compact Protein combined with STS exercise in nursing home residents who adhered to the 12-week intervention* led to:

Improved physical function:
76% of these residents maintained or improved their physical function (P = 0.025)

Significantly increased body weight
(+2.77kg, P <0.01)

Reduced malnutrition risk:
MNA-SF** score significantly increased by approx. 9% (P = 0.005)

Improved body composition:
Significantly increased fat free mass (+2.12kg, P = 0.007)

*at least 40% compliance to the combined intervention (minimum ≥ 5 bottles/week, ≥ 10 STS occasions per week)
** MNA-SF: Mini Nutritional Assessment-Short Form

CONCLUSION:

- Combined nutritional and exercise intervention increased body weight
- Patients with high adherence (at least 40%) to the intervention maintained or improved physical function, gained fat free mass and reduced malnutrition risk

Grönstedt H, Vikström S, Cederholm T, Franzén E, Luiking YC, Seiger Å, Wimo A, Faxén-Irving G, Boström A. Effect of sit-to-stand exercises combined with Protein rich oral supplementation in older persons: The older person's exercise and nutrition study. J Am Med Dir Assoc. 2020 Sep; 21 (9):1229-1237.

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Low volume energy dense oral nutritional supplements improve micronutrient intakes in free living malnourished older people.

Cawood A et al. 2017

Products used: Fortisip® Compact Range

Fortisip® Compact Protein
125mL containing 300Kcal, 18g protein and micronutrients

Fortisip® Compact
125mL containing 300Kcal, 12g protein and micronutrients

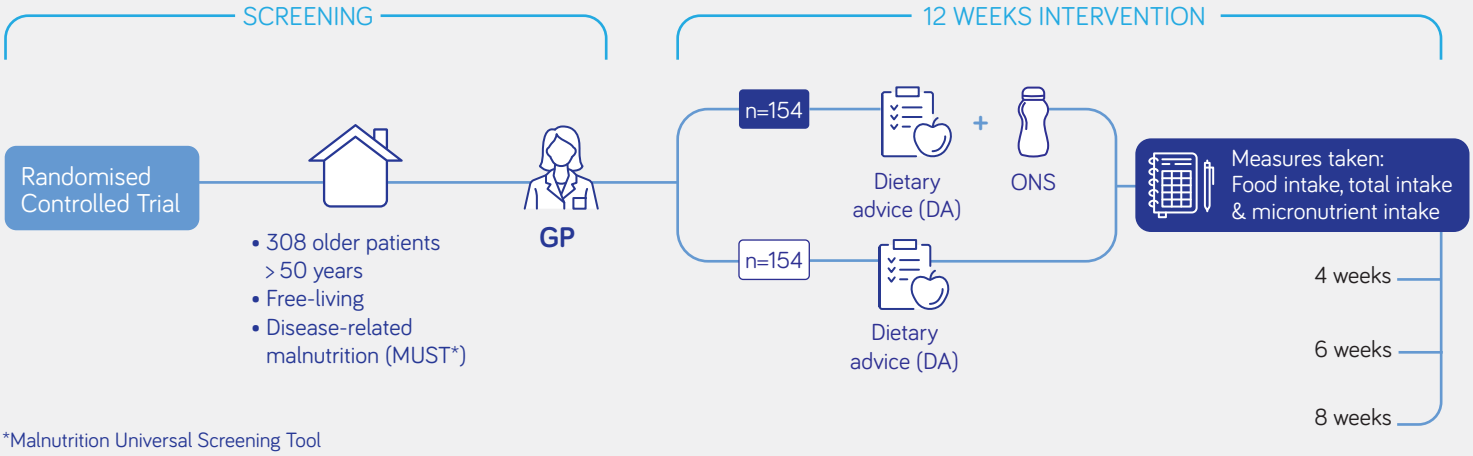
Fortisip® Compact Fibre
125mL containing 300Kcal, 12g protein, 4.5g fibre and micronutrients

Fortisip® Compact Range are all foods for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

BACKGROUND:

Low volume energy dense oral nutritional supplements (ONS) increase protein and energy intake.[1] Micronutrient deficiencies in older adults are difficult to assess and the effect ONS have on micronutrient status is unclear. This novel study investigated the micronutrient status of malnourished free living older people either receiving dietary advice (DA) alone, or receiving dietary advice and consuming a low volume, energy dense ONS.

STUDY METHODOLOGY:



*Malnutrition Universal Screening Tool

KEY FINDINGS:

Low volume, energy dense ONS alongside dietary advice for older people at risk of malnutrition:

Significantly increased micronutrient intake*

- Total micronutrient intake surpassed the DA group by 40%
- Helped to meet recommended nutrient reference values
- Significant improvement in meeting European Food Safety Authority (EFSA) values for micronutrients (86% of micronutrients in ONS + DA vs 43% of micronutrients in DA, P = 0.004)

* Compared to dietary advice alone, except for B12, chloride and sodium

CONCLUSION:

Low volume ONS alongside dietary advice can significantly improve micronutrient intakes in malnourished older adults, who with dietary advice only, were unable to meet adequate intakes.

Cawood A, Smith T, Guildford N, Wood C, Walters E, Stratton R. Low volume energy dense oral nutritional supplements improve micronutrient intakes in free living malnourished older people – A randomised trial. Clinical Nutrition. 2017 Sep; 36: S175-S176

Note: for citations on this page, please see the reference section at the end of the document

The effects of the administration of oral nutritional supplementation with medication rounds on the achievement of nutritional goals: A randomized controlled trial.

Van Den Berg GH et al. 2015

BACKGROUND:

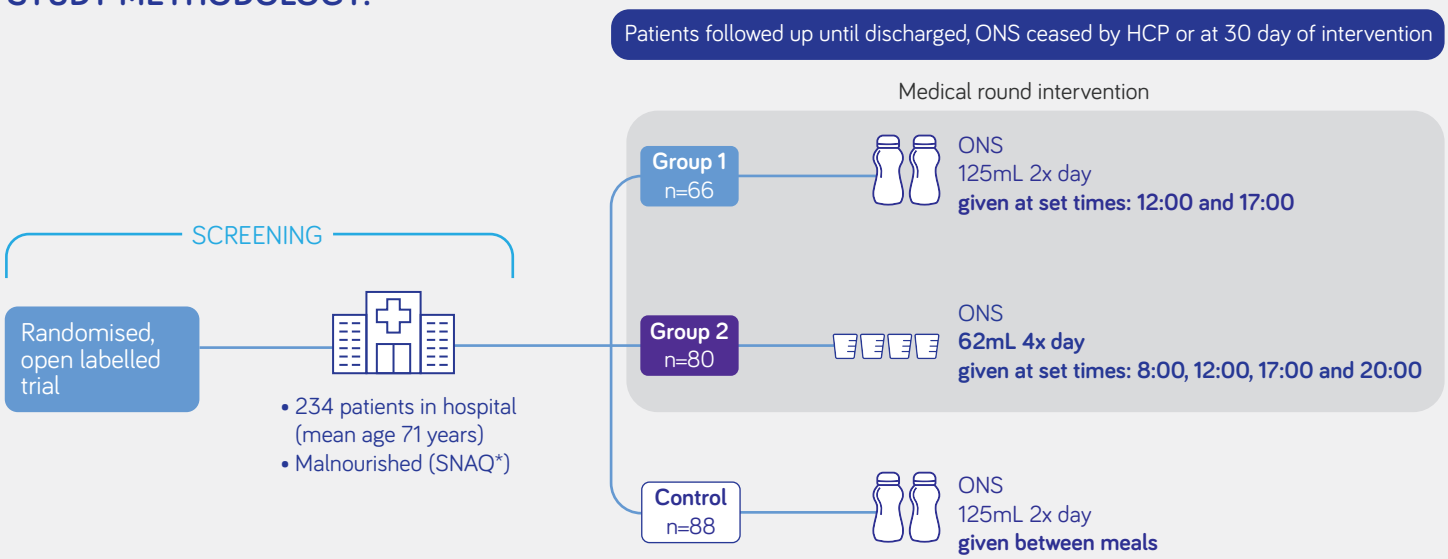
There is evidence to support the use of oral nutritional supplements (ONS) in hospitalised patients at risk of disease related malnutrition to help improve clinical outcomes.[1-5] Compliance can be variable in hospitalised patients due to a variety of factors including poor appetite and taste fatigue.[6] This study investigated whether the use of ONS prescribed during medication rounds (in small volumes frequently) improves compliance in hospitalised patients.

Product used:

Fortisip® Compact
125mL containing 300Kcal, 12g protein and micronutrients

Fortisip® Compact is a food for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

STUDY METHODOLOGY:



*Simplified Nutritional Appetite Questionnaire

KEY FINDINGS:

Fortisip® Compact prescribed in small volumes 4 times per day and dispensed as part of daily medication rounds, resulted in:

Significantly improved compliance*:
73% of patients consumed their prescribed volume of ONS compared with 49% when taken in larger volumes twice daily (P = 0.005)

Significant increase in energy (80kcal/d, P = 0.006) and protein (+3.4g/d, P = 0.004) intake*

Significantly larger consumption of ONS (+35ml/d, P = 0.003)*

*Compared to Fortisip® Compact prescribed 2 times per day in higher volumes

CONCLUSION:

Compliance of ONS improves in hospital when Fortisip® Compact is prescribed as part of the daily medication rounds in small volumes with high frequency. Med Pass should be considered when prescribing ONS in hospital to improve compliance as well as energy and protein intakes.

Van de Berg GH, Lindeboom R, van der Zwet WC. The effects of the administration of oral nutritional supplementation with medication rounds on the achievement of nutritional goals: A randomised controlled trial. Clinical Nutrition. 2015 Feb; 34(1): 15-19

Note: for citations on this page, please see the reference section at the end of the document

Effects of a low-volume, nutrient- and energy-dense oral nutritional supplement on nutritional and functional status: a randomized, controlled trial in nursing home residents.

Stange I et al. 2013

BACKGROUND:

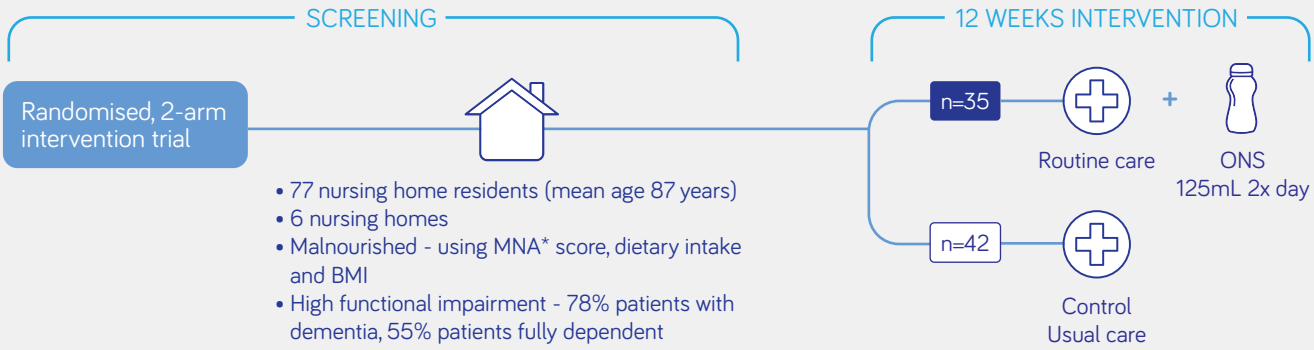
There is evidence to support the use of oral nutritional supplements (ONS) in treating and preventing malnutrition in elderly people.[1-3] However, consuming the volume of ONS required to combat malnutrition in elderly people can be a challenge, and this impacts effectiveness and outcomes. The aim of this study was to determine if use of a low volume, energy dense ONS in nursing home residents (including those with cognitive and mobility impairment) can improve nutritional status, functionality, and quality of life (QOL).

Product used:

Fortisip® Compact
125mL containing 300Kcal, 12g protein and micronutrients

Fortisip® Compact is a food for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

STUDY METHODOLOGY:



*Mini Nutritional Assessment

KEY FINDINGS:

Fortisip® Compact given for 12 weeks in a nursing home setting, resulted in:

Significant improvement in nutritional status:

Significant increase in body weight (+1.2kg, p = 0.001), compared to weight loss (-0.5kg) in the control group

Changes in upper arm circumference, calf circumferences and BMI were significant (P < 0.05)*

Significant improvement in nutritional intake:

Increased total intake of energy (+352 kcal/d) and protein (+13.6g/d) significantly (P < 0.05)

Significantly increased micronutrient intake (P < 0.05)**

Improved quality of life score:

Quality of life 'positive self-perception' significantly increased (P < 0.05)*

Good compliance

Median ONS compliance in the intervention group was 81.9%***

*compared to control group. (no ONS)
**except for magnesium, calcium, vitamin B12 and vitamin A
***when excluding 14 residents who discontinued ONS during the 12 week intervention period

CONCLUSION:

Low volume, nutrient and energy dense ONS were well accepted and had high compliancy amongst elderly nursing home residents, including those with high functional impairment. This resulted in significant improvements in nutritional status and therefore, were effective in treating malnutrition.

Stange I, Bartram M, Liao Y, Poeschl K, Kolpatzik S, Uter W, Sieber CC, Stehle P, Volkert D. Effects of a low-volume, nutrient- and energy-dense oral nutritional supplement on nutritional and functional status: a randomized, controlled trial in nursing home residents. J Am Med Dir Assoc. 2013 Aug;14(8):628.e1-8

Note: for citations on this page, please see the reference section at the end of the document

Improved compliance and increased intake of energy and protein with a high energy density, low volume multi-nutrient supplement.

Hubbard GP et al. 2010

Product used:

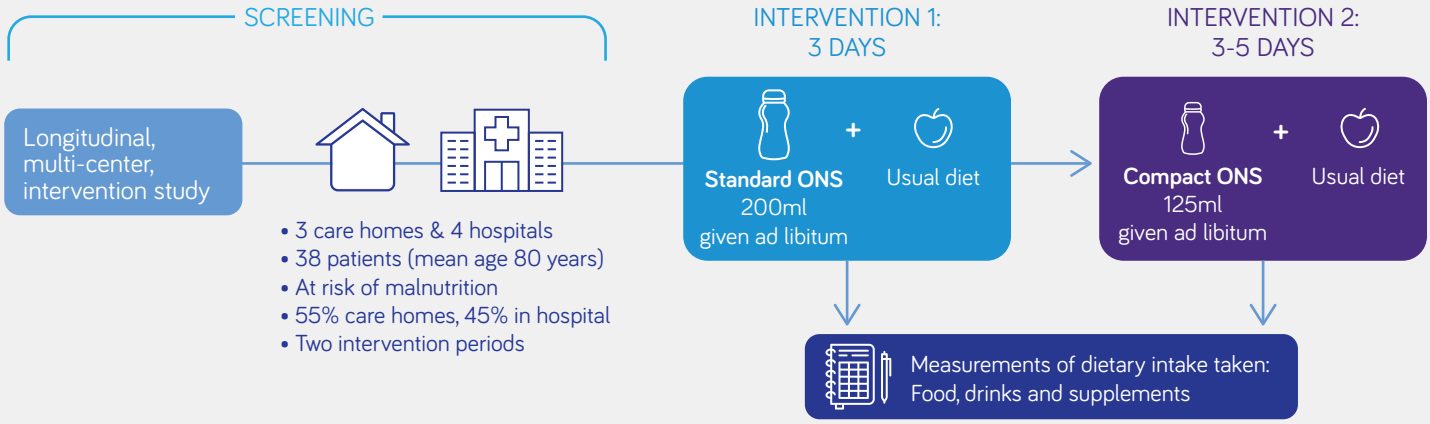
Fortisip® Compact
125mL containing 300Kcal, 12g protein and micronutrients

Fortisip® Compact is a food for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

BACKGROUND:

Whilst it is well known that oral nutritional supplements are effective in preventing and treating malnutrition, compliance can be difficult due to volume. This study investigated whether a low volume oral nutritional supplement would have a greater effect on total nutritional intake and compliance than standard supplements in a clinical setting.[1]

STUDY METHODOLOGY:



KEY FINDINGS:

Implementing appropriate management of malnutrition with Fortisip® Compact led to:

Significantly greater total energy (+200kcal/d, P = 0.01) **and protein** (+11g/d, P = 0.005) intakes*

Significantly greater mean compliance (91%) compared with standard ONS (77%) (P = 0.0001)

Significantly greater intakes of both energy (30%, P = 0.002) **and protein** (24%, P = 0.004) from energy dense ONS*

Note: Food intake was similar in both groups. *Compared with standard supplements (1.5kcal/ml - 2.0kcal/ml)

CONCLUSION:

In a care home and hospital setting, compliance is significantly greater with an energy dense ONS (2.4kcal/ml) than a standard ONS in patients at risk of malnutrition. Improved compliance with energy dense supplements led to significant increases in patient's protein and energy intakes.

Hubbard, G, Buchan B, Sanders K, Brothers S, Stratton R. Improved compliance and increased intake of energy and protein with a high energy density, low volume multi-nutrient supplement. Proc Nutr Soc. 2010 69(OCE2), E164

Note: for citations on this page, please see the reference section at the end of the document

Tackling malnutrition with a new compact oral nutrient supplement among residents in aged care: a pilot study.

O'Brien W et al. 2022

BACKGROUND:

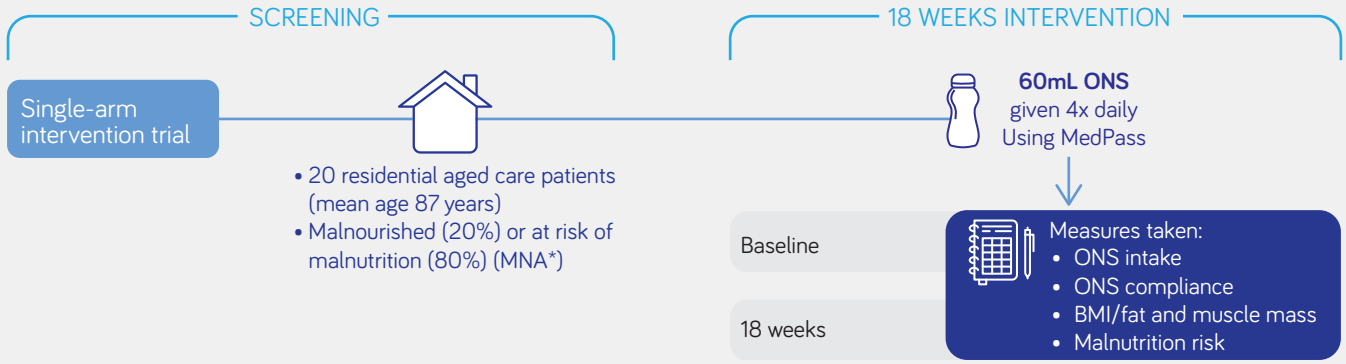
There is a high chance that older adults entering residential aged care (RAC) are either at risk of malnutrition or already malnourished.[1] The prevalence of malnutrition amongst this population highlights the need for dietary intervention including the use of oral nutritional supplements (ONS). The medication pass nutrition supplement programme in Australia found that dispensing an ONS during medication rounds improved compliance.[2] O'Brien et al investigated the use of an energy dense, compact ONS for a Med Pass protocol in New Zealand RAC, and assessed outcomes of malnutrition risk, body composition and well-being measures.

Product used:

Fortisip® Compact Protein
125mL containing 300Kcal, 18g protein and micronutrients

Fortisip® Compact Protein is a food for special medical purposes (FSMP) for the dietary management of disease related malnutrition. FSMP must be used under medical supervision.

STUDY METHODOLOGY:



*Mini Nutritional Assessment

KEY FINDINGS:

New Zealand RAC residents receiving Fortisip® Compact Protein on medication rounds for 18 weeks resulted in:

Improved Malnutrition Risk Score:

Malnutrition Risk Scores improved in 65% of participants

Malnutrition Risk Scores improved from 20% of patients malnourished, and 80% at risk of malnutrition to 10% of patients malnourished, 65% at risk of malnutrition and 25% of patients had normal nutrition scores

High compliance (98.6%)

Improved body composition, with increased:

Body weight (+1.5kg mean increase) for 65% of participants

BMI (+0.5kg/m² mean increase) for 65% of participants

Muscle mass (+0.8kg mean increase) in 56% of participants

Body fat mass (+1.4kg mean increase) in 63% of participants

Note: study recruitment and delivery was impacted by the COVID-19 pandemic, limiting the sample size

CONCLUSION:

When older people living in RAC were given Fortisip® Compact Protein during the medication round as part of a Med Pass protocol, compliance was high and there were improvements in nutrition risk status and body composition measures.

O'Brien W, Jellicoe J, Mazahery H, Wham C. Tackling malnutrition with a new compact oral nutrient supplement among residents in aged care: a pilot study. J Prim Health Care. 2022 Nov; 14:363-367

Note: for citations on this page, please see the reference section at the end of the document

References

Introduction

1. Ljungqvist, et al. Nutr Hosp. 2009;24:368-70
2. Kang, et al. Med Sci. 2018;33:E10
3. Leij-Halfwerk, et al. Maturitas. 2019;126-80-89
4. McKeever, et al. J Aging Res Clin Pract. 2019;8:7-14

Ready-made oral nutritional supplements improve nutritional outcomes and reduce health care use—A randomised trial in older malnourished people in primary care.

Smith TR et al. Nutrients. 2020; 12(2):517.

1. Cereda, et al. Clin Nutr.2016;35:1282-90
2. Verlaan, et al. J Am Med Dir Assoc. 2017;18:374-82
3. Kaiser, et al. J Am Geriatr Soc. 2010;58:1734-8

Economic impact of implementing malnutrition screening and nutritional management in older adults in general practice.

Brown F et al. J Nutr Health Aging. 2020;24(3):305-311

1. Freijer, et al. Clin Nutr. 2013;32:136-41

Effect of sit-to-stand exercises combined with protein rich oral supplementation in older persons: The older person's exercise and nutrition study.

Grönstedt H et al. J Am Med Dir Assoc. 2020 Sep; 21 (9):1229-1237.

1. Crus-Jentoft, et al. Age Ageing. 2019;48:16-31
2. Bourret, et al. J Adv Nurs. 2002;37:338-45
3. Parsons, et al. Proc Nutr Soc 2011;69(OCE7):E547
4. Deutz, et al. Clin Nutr 2014;33:929

Low volume energy dense oral nutritional supplements improve micronutrient intakes in free living malnourished older people.

Cawood et al. Clin Nutr. 2017 Sep; 36: S175-S176

1. Smith, et al. Nutrients. 2020 Feb; 12(2):517

The effects of the administration of oral nutritional supplementation with medication rounds on the achievement of nutritional goals: A randomized controlled trial.

Van de Berg GH et al. Clin Nutr. 2015 Feb; 34(1): 15-19

1. Baldwin, et al. Cochrane Database Sys Rev 2008;(1)
2. Stratton, et al. Clin Nutr Suppl 2007;2(1):5-23
3. Freijer, et al. Eur J Clin Nutr 2010 Oct;64(10):1229-34
4. Baldwin, et al. Clin Nutr 2004 Dec 1;23(6):1267-79
5. Potter, et al. BMJ. 1998 Aug 22;317(7157):495-501
6. Hubbard, et al. Clin Nutr 2012 Jun 1;31(3):293-312

Effects of a low-volume, nutrient- and energy-dense oral nutritional supplement on nutritional and functional status: a randomized, controlled trial in nursing home residents.

Stange I et al. J Am Med Dir Assoc. 2013 Aug;14(8):628. e1-8

1. Milne, et al. Cochrane Database Syst Rev 2009;2:CD003288
2. Stratton, et al. Disease related malnutrition: An Evidence based approach to treatment. Wallingford. CABI Publishing, 2003
3. Volkert, et al. Clin Nutr 2006;25:330-360

Improved compliance and increased intake of energy and protein with a high energy density, low volume multi-nutrient supplement.

Hubbard G et al. Proc Nutr Soc. 2010 69(OCE2), E164

1. Stratton, et al. Disease related malnutrition: An evidence-based approach. CABI Publishing, 2003

Tackling malnutrition with a new compact oral nutrient supplement among residents in aged care: a pilot study.

O'Brien et al. J Prim Health Care. 2022 Nov; 14:363-367

1. Wham, et al. Australas J Ageing 2017; 36(3): 205-11
2. CADTH. The Medication Pass Nutritional Supplement Program in Patients Receiving Medication: A Review of Clinical Effectiveness and Guidelines. CADTH, 2015

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This information is for healthcare professionals only