A SPECIALISED ONS BLEND WITH HIGH PROTEIN, CaHMB AND VITAMIN D

A REVIEW OF THE CLINICAL EVIDENCE ACROSS THE CONTINUUM OF CARE

HOSPITALISATION

MORTALITY
Deutz NE *et al.* 2016
Deutz NE *et al.* 2020

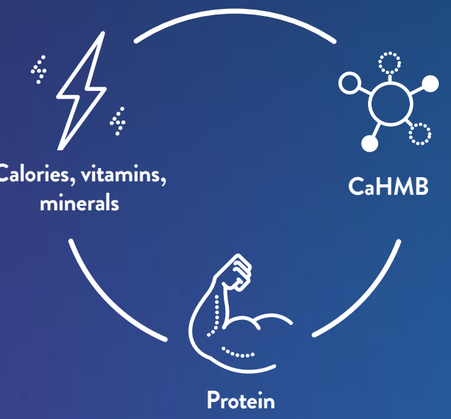
MUSCLE MASS
Ritch CR *et al.* 2019

REHABILITATION

HAND GRIP STRENGTH
Olveira G *et al.* 2016
Matheson EM *et al.* 2020

RECOVERY
Malafarina V *et al.* 2017

MOBILITY
Ekinci O *et al.* 2016



COMMUNITY

QUALITY OF LIFE
De Luis DA *et al.* 2018
De Luis DA *et al.* 2015

STRENGTH & FUNCTION
Cramer JT *et al.* 2016
Berton L *et al.* 2015

CaHMB, calcium ß-hydroxy-ß-methylbutyrate; ONS, oral nutritional supplement.

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ABBOTT'S SPECIALISED ONS BLEND HAS BEEN SHOWN TO REDUCE THE RISK OF DEATH BY 50% IN OLDER MALNOURISHED CARDIOPULMONARY PATIENTS*[1]

Study:

- The NOURISH study: a randomised, placebo-controlled, double-blind study
- Designed to evaluate the impact of adding 2 servings per day of a high protein ONS with CaHMB, vitamins and minerals (intervention ONS) to standard of care on mortality and hospital readmission rates, compared with standard of care and a placebo
- Patients were monitored up to 90 days post-discharge

Participants:

- 622 older (≥65 years), malnourished cardiopulmonary patients (with CHF, AMI, COPD or pneumonia) were included in the analysis

Results:

- 90-day mortality was significantly reduced by 50% in patients receiving the intervention ONS compared with those receiving the placebo and standard of care (4.8% vs 9.7%; $p = 0.018$)
- In addition, patients receiving the intervention ONS achieved a better SGA nutritional class after 90 days ($p = 0.009$), increased body weight at day 30 ($p = 0.035$) and serum vitamin D concentration at days 30 and 60 ($p = 0.035$ and $p = 0.008$, respectively), compared to patients receiving the placebo and standard of care

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CHF, congestive heart failure; AMI, acute myocardial infarction; COPD, chronic pulmonary obstructive disease; ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.
*As shown in a randomised control trial to investigate the effects of the intervention ONS on malnourished, cardiopulmonary patients (≥65 years) vs placebo. The intervention ONS decreased mortality at 90 days post-hospital discharge, however the study did not observe a significant effect for the primary composite endpoint of non-elective readmission or death.[1]

Reference: 1. Deutz NE *et al. Clin Nutr* 2016;35(1):18–26.

ABBOTT'S SPECIALISED ONS BLEND HAS BEEN SHOWN TO REDUCE THE RISK OF DEATH BY 71% IN OLDER MALNOURISHED PATIENTS WITH COPD*[1]

Study:

- A post-hoc, sub-group analysis of the NOURISH study
- Examined the effect of a high protein ONS with CaHMB, vitamins and minerals (intervention ONS) on malnourished, hospitalised older adults with COPD and aimed to identify predictors of outcomes

Participants:

- The COPD subgroup (n = 214) included hospitalised, malnourished (based on Subjective Global Assessment), older adults (≥65 years), with an admission diagnosis of COPD, who received either standard of care plus the intervention ONS (n = 109) or standard of care and a placebo supplement (n = 105)

Results:

- The 30, 60 and 90-day mortality risk was found to be ~71% lower in the intervention group compared to those who had the placebo and standard of care (1.83%, 2.75%, 2.75% vs. 6.67%, 9.52% and 10.48%, *p* = 0.0395, 0.0193, 0.0113, respectively)
- In addition, nutritional supplementation with the intervention ONS resulted in an increase in handgrip strength from discharge to day 30; improved body weight from baseline to discharge, and improved blood nutritional biomarkers concentrations, including haemoglobin and serum concentrations of calcium and vitamin D

Read the full study online

CHF, congestive heart failure; AMI, acute myocardial infarction; COPD, chronic pulmonary obstructive disease; ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.
* As shown in a randomised control trial to investigate the effects of the intervention ONS on malnourished, cardiopulmonary patients (≥65 years) vs placebo. The intervention ONS decreased mortality at 90 days post-hospital discharge, however the study did not observe a significant effect for the primary composite endpoint of non-elective readmission or death.[1]

Reference: 1. Deutz NE *et al. Clin Nutr* 2020. doi:10.1016/j.clnu.2020.08.031.

ABBOTT'S SPECIALISED ONS BLEND HELPS PRESERVE MUSCLE IN OLDER CANCER PATIENTS[1]

Study:

- Prospective, randomised, controlled study
- Patients received a high protein ONS with CaHMB, vitamins and minerals (intervention group) or a multivitamin multimineral supplement (control group) twice daily during an 8-week perioperative period
- The study was designed to investigate the effects of intervention ONS on body composition and clinical outcomes following radical cystectomy

Participants:

- 61 patients (median patient age of 68 years) who had undergone radical cystectomy

Results:

- Patients in intervention group lost less muscle mass (-3.2 vs -5 cm^2/m^2, $p = 0.01$); compared with the control group
- The proportion of patients with sarcopenia did not change in the intervention group but increased 20% in the control group ($p = 0.01$)
- The intervention group had a lower rate of overall and major (Clavien grade 3 or greater) complications (48% vs. 67% and 19% vs 25%, respectively) and a lower readmission rate (7% vs 17%) but the differences did not reach statistical significance

Read the full study online

ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.

Reference: 1. Ritch CR *et al. J Urol* 2019;201(3):470–477.

ABBOTT'S SPECIALISED ONS BLEND IS PROVEN TO SUPPORT RECOVERY IN OLDER ADULTS WITH HIP FRACTURES[1]

Study:

- Multi-centre, randomised controlled trial
- Patients either received a standard diet* plus 2 bottles of a high protein ONS with CaHMB and additional vitamin D or a standard diet only
- The aim was to investigate the effects of the specialised ONS on mobilisation status, body composition, muscle strength, and nutritional markers in older adults who underwent surgery for hip fracture

Participants:

- 92 older patients (≥65 years) with hip fractures admitted to rehabilitation facilities were included in the analysis

Results:

- Weight and muscle mass were stable in the intervention group, whilst these parameters decreased in the control group, with a significant difference in between groups ($p<0.001$ and $p = 0.02$, respectively)
- In the intervention group, total protein and vitamin D blood concentrations were significantly higher than in the control group
- A diet enriched with the specialised ONS was associated with functional recovery in older patients with hip fractures undergoing rehabilitation therapy

Read the full study online

*Standard diet provided 1500 kcal, 87.4 g protein a day
ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.
Reference: 1. Malafarina V *et al. Maturitas* 2017;101:42–50.

ABBOTT'S SPECIALISED ONS BLEND HELPS IMPROVE HAND GRIP STRENGTH IN BRONCHIECTASIS PATIENTS[1]

Study:

- Single centre, randomised, control study with a parallel treatment design
- The goal was to assess the effect of 12 weeks' pulmonary rehabilitation, or pulmonary rehabilitation plus 1 bottle of a high protein ONS with CaHMB and additional vitamin D on body composition, muscle strength, quality of life and serum biomarkers

Participants:

- 30 normally nourished, non-cystic-fibrosis bronchiectasis patients (aged from 18 to 80 years)

Results:

- The addition of the specialised ONS to pulmonary rehabilitation improved body composition, bone mineral density, hand grip strength* and health related quality of life in bronchiectasis patients

Read the full study online

*Muscle strength was measured by hand dynamometry.
ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.
Reference: 1. Olveira G *et al. Clin Nutr* 2016;35(5):1015–1022.

ABBOTT'S SPECIALISED ONS BLEND HAS BEEN SHOWN TO SIGNIFICANTLY IMPROVE MOBILISATION AFTER ORTHOPAEDIC SURGERY[1]

Study:

- Randomised, controlled trial lasting 30 days
- The control group received standard postoperative nutrition*, while the intervention group received 2 servings a day of a high protein ONS with CaHMB and additional vitamin D between meals in addition to the standard postoperative nutrition plan
- The goal was to investigate the effects of the specialised ONS on mobilisation status following surgery for a hip fracture

Participants:

- 62 older female patients (≥65 years) with hip fractures admitted to orthopaedic clinics

Results:

- 81.3% (26/32) of patients in the intervention group were mobile on day 15 and on day 30 compared with 26.7% (8/30) of patients in the control group ($p = 0.001$)
- In addition, muscle strength on day 30 was significantly higher in the intervention group than in the control group (8.63 ± 3.83 Kgf vs. 6.40 ± 3.86 Kgf; $p = 0.026$), and wound-healing period was significantly shorter in the intervention group than the control group (14.56 ± 2.80 days vs. 15.93 ± 2.18 days; $p < 0.05$)

Read the full study online

*Postoperative nutrition provided 1900 kcal and 76 g protein a day
ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.
Reference: 1. Ekinci O *et al. Nutr Clin Pract* 2016;31(6):829–835.

ABBOTT'S SPECIALISED ONS BLEND IMPROVED LEG STRENGTH IN OLDER SARCOPENIC PATIENTS[1]

Study:

- 24-week, randomised, double-blinded, controlled clinical trial
- Designed to evaluate two different high-quality ONS: a standard control ONS (14 g protein; 147 IU vitamin D3) and an intervention ONS (20 g protein; 499 IU vitamin D3; 1.5 g CaHMB), twice daily

Participants:

- 330 older patients (≥65 years) with malnutrition and sarcopenia

Results:

- Both ONS improved strength outcomes in these patients, showing nutritional support is effective in these patients
- In addition, in those with mild-moderate sarcopenia, consumption of the intervention ONS significantly improved leg muscle strength and quality* compared with the standard control ONS at 12 weeks ($p = 0.032$)

Read the full study online

*Muscle quality was calculated as leg strength expressed relative to the muscle mass.
ONS, oral nutritional supplement(s); CaHMB, calcium ß-hydroxy-ß-methylbutyrate.
Reference: 1. Cramer JT *et al. J Am Med Dir Assoc* 2016;17(11):1044–1055.

ABBOTT'S SPECIALISED ONS BLEND HELPS IMPROVE STRENGTH AND PHYSICAL PERFORMANCE IN HEALTHY OLDER ADULTS[1]

Study:

- A parallel-group, randomised, controlled, open-label trial
- The aim was to evaluate whether 1 serving of a high protein ONS with CaHMB and additional vitamin D daily could improve physical performance and muscle strength for 8 weeks

Participants:

- 80 healthy older female patients (≥65 years) who regularly attended a twice-weekly mild fitness programme

Results:

- Consumption of the specialised ONS led to significant improvements in hand grip endurance activities (delta = 21.41 ± 16.28 s; $p = 0.02$) and measures of strength (delta = 9.74 ± 3.90 Nm; $p = 0.02$) from baseline

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ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.

Reference: 1. Berton L, *et al*. *PLoS One* 2015;10(11):e0141757.

ABBOTT'S SPECIALISED ONS BLEND HAS BEEN SHOWN TO IMPROVE QUALITY OF LIFE AND HAND GRIP STRENGTH IN OLDER COMMUNITY DWELLING PATIENTS[1]

Study:

- Open-label, 12-week study
- The aim was to study the effect of 2 bottles per day of a high protein ONS with CaHMB and additional vitamin D on various parameters, including strength and quality of life in older patients vs. baseline

Participants:

- 35 older patients (≥65 years) with recent weight loss (>5% in the previous 3 months)

Results:

- All patients had significant improvements in hand grip strength ($p < 0.05$)
- Patients who experienced >3.4% weight gain had significant improvements in the physical and general health domains of the SF-36 quality of life score
- All patients significantly increased their consumption of calories, carbohydrates, protein, fat and vitamin D from baseline

Read the full study online

SF-36, short form-36; ONS, oral nutritional supplements; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.

Reference: 1. De Luis DA *et al. Nutr Hosp* 2015;32(1):202–207.

ABBOTT'S SPECIALISED ONS BLEND HELPS IMPROVE QUALITY OF LIFE IN OLDER MALNOURISHED PATIENTS[1]

Study:

- Observational, prospective, 12-week, open-label, multicentre study
- The aim was to evaluate the effectiveness of twice daily consumption of a high protein ONS with CaHMB and additional vitamin D on nutritional status, activities of daily living and quality of life (QoL) in older malnourished patients

Participants:

- 235 older patients (≥65 years) who were undernourished or at nutritional risk (Nutrition Risk Score ≥3) under usual clinical practice

Results:

- Administration of the specialised ONS led to significant improvements in activities of daily living (independence) and QoL, as shown by a significant ($p < 0.001$) improvement in Katz index (mean change = 0.3; SD: 1.4) and EQ-5D scoring (mean change = 0.5; SD: 1.9), respectively, and compared to baseline
- In addition, body weight, body mass index (BMI) and nutritional status were significantly improved by the end of study

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EQ-5D, EuroQol- 5 Dimension; ONS, oral nutritional supplement; CaHMB, calcium ß-hydroxy-ß-methylbutyrate.

Reference: 1. De Luis DA *et al. Eur Geriatr Med* 2018;9(6):809–817.

ABBOTT'S SPECIALISED ONS BLEND IMPROVES HAND GRIP STRENGTH IN CARDIOPULMONARY PATIENTS[1]

Study:

- A post-hoc analysis of the NOURISH study
- Patients received standard of care plus a high protein ONS with CaHMB, vitamins and minerals (intervention group) or a placebo supplement (control group), aimed at 2 servings/day
- The goal was to examine the effect of the intervention ONS on hand grip strength (HGS)* during hospitalisation and up to 90 days after discharge

Participants:

- 652 older patients (≥65 years) with malnutrition, hospitalised for cardiovascular and pulmonary events

Results:

- Patients in the intervention group during hospitalisation and up to 90 days post-discharge had significant improvements in HGS vs the control group (Least Squares Means ± Standard Error: (23.25 ± 0.25 vs 22.63 ± 0.25, $p = 0.043$)
- At day 90, there was a significant positive association between HGS and nutritional status. Of those patients with increased HGS from discharge, 49% had improved nutritional status over 31% with unchanged or decreased HGS (p = 0.003)

Read the full study online

*Muscle strength was measured by hand dynamometry.
ONS, oral nutritional supplements; CaHMB, calcium ß-hydroxy-ß-methylbutyrate; HGS, hand grip strength.
Reference: 1. Matheson EM *et al. Clin Nutr* 2020. doi:10.1016/j.clnu.2020.08.035.