

# EFFECT OF A TAILORED LOW VOLUME, HIGH PROTEIN, OMEGA-3 ENRICHED ORAL NUTRITIONAL SUPPLEMENT ON NUTRITIONAL OUTCOMES IN PATIENTS WITH CANCER UNDERGOING SYSTEMIC TREATMENT

## INTRODUCTION

Low nutritional intake and metabolic changes such as inflammation drive cancer-related malnutrition. **ESPEN and ESMO guidelines recommend high protein intake and the use of omega-3 fatty acids** to stabilize or improve nutritional intake and status in patients with cancer receiving chemotherapy<sup>1,2</sup>.

## METHODS

This single-arm, open-label, multicentre, and multi-country intervention study enrolled patients with **colorectal cancer (CRC)** and **non-small cell lung cancer (NSCLC)** who were at-risk of malnutrition (PG-SGA-SF score  $\geq 4$ ) and receiving systemic anti-cancer treatment (SACT). Patients were prescribed 2x125ml servings daily of a novel oral nutritional supplement (ONS) (**Fortimel Forticare Sensations**, 306 kcal, 18g protein, 1.1g EPA, 0.7 g DHA, 10µg vitamin D per serving) for **8-9 weeks** during SACT. Nutritional intake was assessed via a dietitian-administered 24-hour recall at baseline (T0), end of first in-study cycle of SACT (T1) and after  $\geq 8$  weeks of intervention (T2). The primary aim was to assess the effect of the ONS on EPA concentration in the phospholipid fraction of the erythrocyte membrane [% of total fatty acids].

## POPULATION

A total of 47 patients were included in the study. Most were male (66%), with a mean age of 61.6 years ( $\pm 11.9$ ). At the time of screening, 75% had stage IV cancer.

| CATEGORY                |                                      | STATISTIC | TOTAL (N=47)  |
|-------------------------|--------------------------------------|-----------|---------------|
| Age (years)             |                                      | Mean (SD) | 61.6 (11.90)  |
| Gender                  | Male                                 | n (%)     | 31 (66.0%)    |
|                         | Female                               | n (%)     | 16 (34.0%)    |
| Body mass index (kg/m2) |                                      | Mean (SD) | 26.97 (4.191) |
| Treatment               | Chemotherapy                         | n (%)     | 30 (63.8%)    |
|                         | Concurrent chemoradiotherapy         | n (%)     | 0 (0.0%)      |
|                         | Immunotherapy                        | n (%)     | 4 (8.5%)      |
|                         | Chemo-immunotherapy Targeted therapy | n (%)     | 12 (25.5%)    |
|                         |                                      | n (%)     | 1 (2.1%)      |

## CONCLUSION

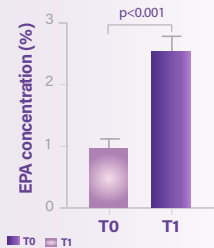
This study demonstrates that low volume, high protein, omega 3 enriched ONS are an effective and safe solution to support cancer patients undergoing systemic anti-cancer treatment. In this study, supplementation with a novel, low volume ONS resulted in an increased EPA concentration in the phospholipid fraction of the erythrocyte membrane. Additionally, consumption of the ONS also resulted in significant improvements in protein and vitamin D intake.

| Study population: 47 CRC or NSCLC patients with or at risk of malnutrition                          |           | Intervention: 2 servings/day of Fortimel® Forticare Sensations (125ml, 18g protein, 1.1g EPA, 0.73g DHA, 10mcg vitamin D, 306kcal per serving) for at least 8 weeks |                                          |                                                       |
|-----------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------|
| Outcome parameter                                                                                   | SCREENING | T0 (baseline)                                                                                                                                                       | T1 (end of first in-study cycle of SACT) | T2 (first visit after $\geq 8$ weeks of intervention) |
| EPA concentration in the phospholipid fraction of the erythrocyte membrane [% of total fatty acids] |           | X                                                                                                                                                                   | X                                        | X                                                     |
| Protein intake                                                                                      |           | X                                                                                                                                                                   | X                                        | X                                                     |
| Vitamin D intake                                                                                    |           | X                                                                                                                                                                   | X                                        | X                                                     |
| Body weight (BW)                                                                                    |           | X                                                                                                                                                                   | X                                        | X                                                     |
| Nutritional status (PG-SGA-SF)                                                                      | X         |                                                                                                                                                                     |                                          | X                                                     |

## RESULTS

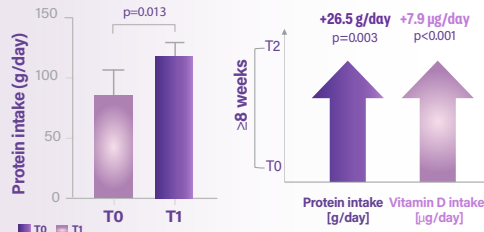
### EPA incorporation

- At T1, estimated mean EPA incorporation was significantly higher compared to T0 ( $2.50 \pm 0.26\%$  at T1 vs  $0.96 \pm 0.17\%$  at T0,  $p < 0.001$ ).



### Protein & vitamin D intake

- Estimated mean protein intake (g/day) significantly increased from  $86.9 \pm 17.2$  at T0 to  $104.8 \pm 17.8$  at T1 ( $p = 0.013$ ).
- Significant positive mean change was observed from T0 to T2 in protein intake ( $+26.5$  g/day,  $p = 0.003$ ) and vitamin D intake ( $+7.9$  µg/day,  $p < 0.001$ ).

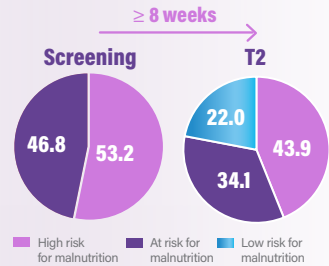


### Body weight

- Mean BW (kg) was  $79.6 \pm 14.6$  at T0 and  $80.2 \pm 14.0$  at T2.

### Nutritional status

- At screening, 53.2% of patients were considered to be at high risk for malnutrition and 46.8% were considered 'at risk' according to the PG-SGA-SF. At T2, 43.9% of patients were considered to be at high risk for malnutrition, 34.1% were considered 'at risk' and 22% were considered at low risk for malnutrition.



## RELEVANCE FOR CLINICAL PRACTICE

These findings support the integration of targeted nutritional intervention with high protein, omega-3 enriched ONS into routine oncology care as an effective strategy to counteract cancer-related malnutrition and to improve the dietary intake of critical nutrients like protein and vitamin D.

ONS: oral nutritional supplement; EPA: eicosapentaenoic acid; DHA: docosahexaenoic acid; CRC: colorectal cancer; NSCLC: non-small cell lung cancer; BW: body weight; PG-SGA-SF: patient-generated subjective global assessment form; KG: kilogram; SACT: systemic anti-cancer treatment. Presented at the 47th ESPEN congress (2025) by dr. Aoife Ryan. References: 1. Arends et al. Clin Nutr. 2017;36(1):11-48 2. Arends et al. ESMO OPEN. 2021;6(3):100092. Fortimel Forticare is a food for special medical purposes, for the dietary management of patients with or at risk of disease related malnutrition due to cancer, chronic catabolic disease or cachexia. It must be used under medical supervision.