



**FRESENIUS
KABI**

caring for life

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Products in practice series

Fresubin® 3.2 kcal Drink

Concentrated energy and protein for when compliance is a challenge in patients struggling to achieve their nutritional requirements



Fresubin 3.2 kcal Drink is available in 3 flavours: vanilla-caramel, mango and hazelnut

A case study presented by an Advanced Dietetic Practitioner in Enteral Feeding

Switching to a low volume (125ml), energy dense (3.2kcal/ml), high protein (20g) oral nutritional supplement (ONS), for a patient with motor neurone disease struggling with nausea associated with the large volumes of feed required to meet his nutritional requirements.



Presentation and previous medical history

- 65 year old male, diagnosed with MND (Motor Neurone Disease).
- Unable to walk but able to communicate.
- Dependent on his wife for all medical care.
- Seen in outpatient clinic by Dietitian 6 months after MND diagnosis due to poor oral intake.
- PEG (Percutaneous Endoscopic Gastrostomy) subsequently fitted to allow 'top up' bolus feeds.
- Pump feeding considered but ruled out due to practical difficulties at home.

'Patients with MND often struggle to maintain their oral intake of food and fluids, and this often worsens as their condition deteriorates.'

Patient weight pre- and post-treatment

At diagnosis of MND	108kg (BMI 30.9 kg/m ²)
9 months after diagnosis, at time of PEG placement	82kg (BMI 23.4 kg/m ²)
1 month after prescription of Fresubin 3.2 kcal Drink	62kg (BMI 17.7 kg/m ²) (weight stabilised)

Nutritional support

Dietetic history and interventions

- Patient managing very little oral diet; food fortification advised at initial consultation.
- At follow-up patient prescribed ONS to help meet nutritional requirements: 2kcal/ml, 3 x 200ml per day alongside pureed diet.
- PEG placed 9 months post-diagnosis of MND due to little / no solid oral intake.
- Oral / bolus feed with a target of 5 x 200ml 2kcal/ml (1000ml total) per day plus pureed diet.
- Increasing ONS from 3 to 5 per day caused nausea, which was thought to be due to the high volumes required to meet nutritional needs.
- Patient subsequently refused to take ONS orally or via PEG; pump feeding impractical due to situation at home.
- Continued weight loss.

Nutritional goals - maintenance of weight, alleviation of symptoms of nausea, prevention of malnutrition and dehydration.

Nutritional requirements

Energy: 1959.6kcal based on Schofield equation

Protein: 98.4g based on PENG (the Parenteral and Enteral Nutrition Group) recommendations of 1.2g/kg for older adults

Nutritional intervention

Due to continued weight loss and nausea, it was felt that a reduction in feed volume could help to alleviate symptoms and support maintenance of weight. This was discussed with the patient and the Dietitian advised Fresubin 3.2 kcal Drink, (5 x 125ml per day) providing 2000kcal and 100g protein.

The patient liked the smell of Fresubin 3.2 kcal Drink and the choice of flavours.



Review

The patient was reviewed a few weeks after starting on Fresubin 3.2 kcal Drink and was found to be tolerating 5 x 125ml per day via the oral route and via his PEG. The patient's weight remained stable at 62kg.

Outcome

The aims of the nutritional intervention included maintenance of weight and management of nausea symptoms. Target intake volume was reduced from 1000ml to 625ml.

Switching to a low volume, energy dense ONS in terms of calories and protein resulted in the patient successfully managing to bolus feed and showing an improvement in compliance.

Discussion

Managing patients with MND can be challenging as disease progression often coexists with increasing difficulties in maintaining oral intake of fluid and food.

Having a low volume (125ml), energy dense product such as Fresubin 3.2 kcal Drink can help to address the specific nutritional needs of these types of patients through the achievement of nutritional goals using much lower volumes.

Additionally, patients with MND are typically reliant on carers to provide their medical treatment, who often have limited time available. Using a low volume ONS as an alternative to a 200ml ONS, makes the administration less time consuming for carers while at the same time ensuring patients are still able to achieve their nutritional goals.

Rationale for the intervention

A number of reviews and studies have been published exploring the factors that influence nutritional intakes.^{1,3} A study published in 2000 showed that increasing energy and protein density without increasing volume was more effective in meeting nutritional targets in older people.¹ Nieuwenhuizen and colleagues (2010) identified 37 factors, including those related to environment and product, that affected nutritional intake in older adults.² Product factors found to be effective at improving nutritional intake of ONS were low volume, high energy density, palatability and a liquid presentation.

In a systematic review in 2012 there was a significant correlation between compliance to ONS and energy density.³

ESPEN Guidelines 2018⁴ state weight loss is detrimental for survival in this group of patients, and whether using oral or enteral nutrition the aim should be weight stabilisation or weight maintenance depending on the baseline nutritional state. Nutritional supplementation is recommended for patients who do not cover their nutritional requirements with an enriched diet. Due to the high prevalence and impact on nutritional status and risk of respiratory complications, dysphagia screening is recommended in every patient - both at diagnosis and during follow up. Gastrostomy feeding should be discussed at an early stage, and at regular intervals, according to the evolution of the swallowing problems of safety and efficacy. The gastrostomy should be performed before severe weight loss occurs and before respiratory function is severely impaired.

In the managing hospital the prescribing of all enteral products and associated costs, in both the acute and the community setting, are managed by the Dietitians. This enables the Dietitians to use their clinical judgement to prescribe the products that are felt to offer the best solution for patients.

Dietitian's perspective

'The patient was refusing everything and his condition was deteriorating. Fortunately, the patient liked the smell of the product and the choice of flavours. Fresubin 3.2 kcal Drink offered a great solution to

a difficult situation and also helped with symptom management. I would now opt for Fresubin 3.2 kcal Drink as a first line treatment for all my MND patients.'

Fresubin 3.2 kcal Drink is an energy dense (3.2kcal/ml), high calorie (400kcal), high protein (20% energy), low volume (125ml) ONS. High in Vitamin D.

Fresubin® 3.2 kcal Drink

DESCRIPTION A flavoured liquid consisting of protein (milk, collagen hydrolysate), rapeseed oil, carbohydrates (glucose syrup, saccharose), vitamins, minerals and trace elements.

PRESENTATION Fresubin® 3.2 kcal Drink is a high energy (3.2 kcal/ml), high protein (16g /100ml) sip feed in a low volume. Fresubin® 3.2 kcal Drink is ready to use and presented in a 125ml bottle. It is available in three flavours: Vanilla-Caramel, Hazelnut and Mango. Lactose and gluten free

CONTRA-INDICATIONS FOR ENTERAL USE ONLY. NOT SUITABLE WHERE ENTERAL NUTRITION IS NOT PERMITTED. NOT SUITABLE FOR CHILDREN UNDER THREE YEARS OF AGE.

PRECAUTIONS SHOULD ONLY BE USED UNDER MEDICAL SUPERVISION. USE WITH CAUTION IN CHILDREN UNDER 6 YEARS. ENSURE ADEQUATE FLUID INTAKE.

INDICATIONS FOR USE Fresubin® 3.2 kcal is a Food for Special Medical Purposes. Fresubin® 3.2 kcal is prescribable on FPI0/GP10 for the following indications: For the dietary management of disease related malnutrition, short bowel syndrome, intractable malabsorption, pre-operative preparation of malnourished patients, dysphagia, proven inflammatory bowel disease, following total gastrectomy, bowel fistula.

DOSAGE Dosage should be calculated by a clinician or Dietitian according to individual requirements. As a guide: For supplementary nutrition: 1-2 x 125ml bottles per day will provide 20- 40g protein and 400 - 800kcal.

STORAGE Store at room temperature (15 -25°C). Opened bottles may be stored in a refrigerator for up to 24 hours.

SHELF-LIFE 9 months from date of manufacture.

INGREDIENT LISTS VANILLA-CARAMEL FLAVOUR Water, glucose syrup, rapeseed oil, collagen hydrolysate, sucrose, milk protein, maltodextrin, stabilisers (E460, E466), flavourings, emulsifiers (E471, soya lecithins, E472e), calcium phosphate, potassium chloride, acidity regulators (E524, E525), potassium hydrogen phosphate, potassium citrate, vit.C, calcium citrate, magnesium chloride, magnesium oxide, iron pyrophosphate, sodium chloride, zinc sulphate, niacin, manganese chloride, vit. E, pantothenic acid, copper sulphate, sodium fluoride, vit. B₂, Vit. B₆, vit. B₁, β- carotene, vit. A, chromium chloride, folic acid, sodium molybdate, potassium iodide, sodium selenite, vit. K₁, biotin, vit. D₃, Vit. B₁₂. **HAZELNUT FLAVOUR** Water, glucose syrup, rapeseed oil, collagen hydrolysate, sucrose, milk protein, maltodextrin, stabilisers (E460, E466), emulsifiers (E471, soya lecithins, E472e), calcium phosphate, potassium chloride, flavourings, acidity regulators (E524, E525), potassium hydrogen phosphate, potassium citrate, vit.C, calcium citrate, magnesium chloride, magnesium oxide, iron pyrophosphate, sodium chloride, zinc sulphate, niacin, manganese chloride, vit. E, pantothenic acid, copper sulphate, sodium fluoride, vit. B₂, Vit. B₆, vit. B₁, β- carotene, vit. A, chromium chloride, folic acid, sodium molybdate, potassium iodide, sodium selenite, vit. K₁, biotin, vit. D₃, Vit. B₁₂. **MANGO FLAVOUR** Water, glucose syrup, rapeseed oil, collagen hydrolysate, sucrose, milk protein, maltodextrin, stabilisers (E460, E466), emulsifiers (E471, soya lecithins, E472e), calcium phosphate, potassium chloride, acidity regulators (E524, E525), flavouring, potassium hydrogen phosphate, potassium citrate, vit.C, calcium citrate, magnesium chloride, magnesium oxide, iron pyrophosphate, sodium chloride, zinc sulphate, niacin, manganese chloride, vit. E, pantothenic acid, copper sulphate, sodium fluoride, vit. B₂, Vit. B₆, vit. B₁, β- carotene, vit. A, chromium chloride, folic acid, sodium molybdate, potassium iodide, sodium selenite, biotin, vit. K₁, vit. D₃, Vit. B₁₂.

ORDER CODES Hazelnut 7045801 Vanilla-Caramel 7047801 Mango 7052801

References

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- Nieuwenhuizen WF, Weenen H, Rigby P, Hetherington MM. Older adults and patients in need of nutritional support: review of current treatment options and factors influencing nutritional intake. Clin Nutr. 2010;29(2):160-169.
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- Burgos et al. ESPEN Guideline Clinical Nutrition in neurology. Clinical Nutrition 37(2018) 354-396.

Nutritional Composition		Per 100ml	Per 125ml EasyBottle
Energy	kcal (kJ)	320 (1344)	400 (1680)
Protein	g	16	20
Carbohydrate	g	28	35
Of which sugars	g	10.8	13.5
Of which lactose	g	≤0.24	≤0.3
Fat	g	16	20
Of which saturated fatty acids	g	1.1	1.38
Of which monounsaturated fatty acids	g	9.9	12.4
Of which polyunsaturated fatty acids	g	5.0	6.25
Fibre	g	0.5	0.63
Salt	g	0.28	0.35
Water	ml	56	70
Osmolarity	mosmol/l	630-730*	
Osmolality	mosmol/kg H ₂ O	1121- 1300*	
Minerals and Trace Elements		Per 100ml	Per 125ml EasyBottle
Sodium	mg (mmol)	112 (4.9)	140 (6.1)
Potassium	mg (mmol)	312 (8.0)	390 (10)
Chloride	mg (mmol)	144 (4.1)	180 (5.1)
Calcium	mg (mmol)	160 (4.0)	200 (5.0)
Phosphorus	mg (mmol)	112 (3.6)	140 (4.5)
Magnesium	mg (mmol)	40 (1.6)	50 (2.0)
Iron	mg	4.8	6
Zinc	mg	3.5	4.4
Copper	µg	512	640
Manganese	mg	1.2	1.44
Iodine	µg	44.8	56
Chromium	µg	23	28.8
Molybdenum	µg	30.4	38
Fluoride	mg	0.4	0.52
Selenium	µg	23	28.8
Vitamins and Other Nutrients		Per 100ml	Per 125ml EasyBottle
Vitamin A	µgRE	295	369
Of which β- carotene	µgRE	71	89
Vitamin D ₃	µg	8	10
Vitamin E	mgαTE	5.76	7.2
Vitamin K ₁	µg	20.8	26
Vitamin B ₁	mg	0.5	0.63
Vitamin B ₂	mg	0.51	0.64
Niacin	mg (mgNE)	5.4(6.2)	6.75(7.75)
Vitamin B ₆	mg	0.58	0.73
Vitamin B ₁₂	µg	1.1	1.38
Pantothenic Acid	mg	1.92	2.4
Biotin	µg	14.4	18
Folic Acid	µg	67.2	84
Vitamin C	mg	41.6	52

* Depending on flavour