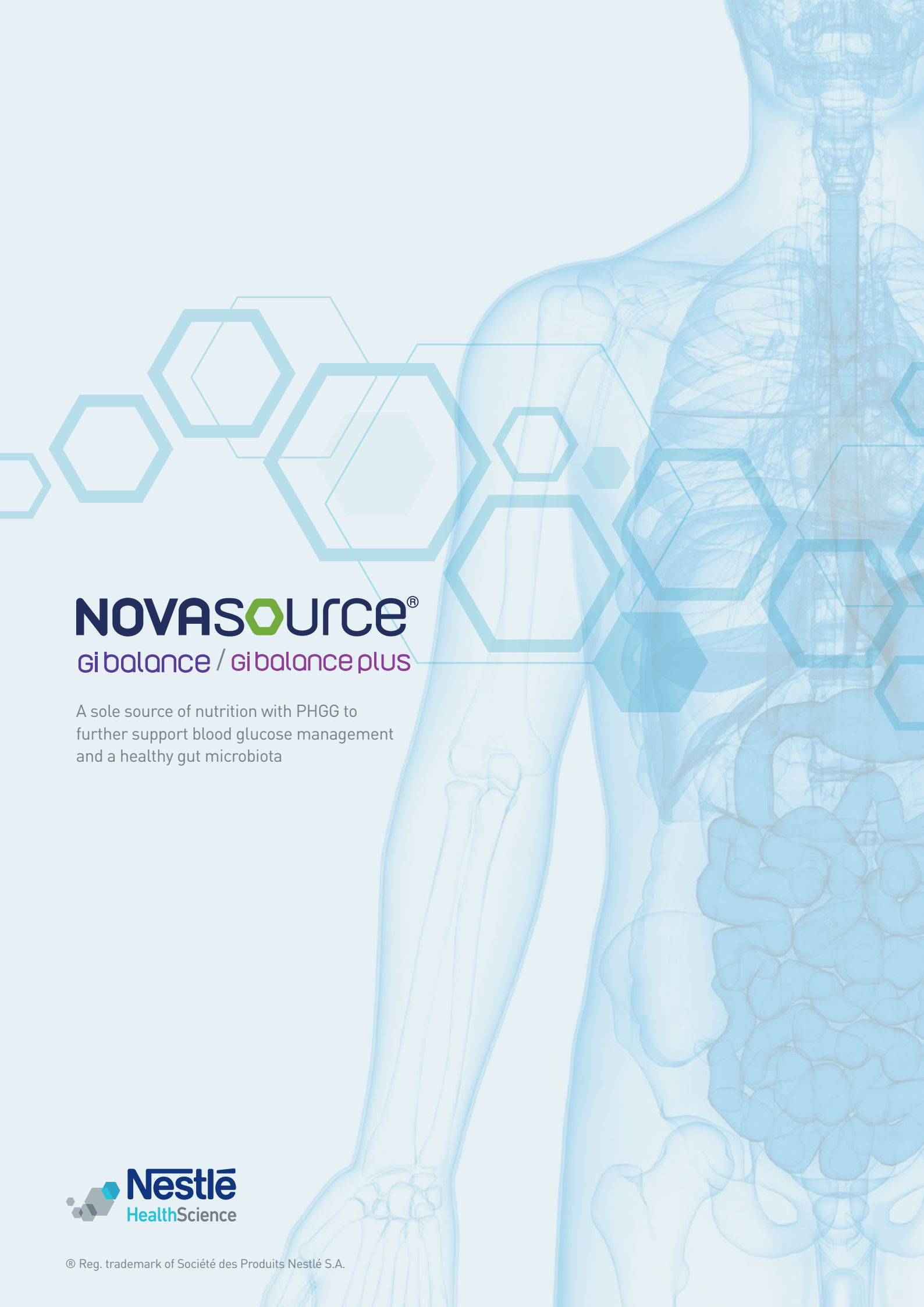


NOVASOURCE®

GI BALANCE / GI BALANCE PLUS

A sole source of nutrition with PHGG to further support blood glucose management and a healthy gut microbiota

Nestlé HealthScience

New Formulation

Novasource Gi Balance and Novasource Gi Balance Plus

Re-formulated to improve tolerance whilst addressing specific needs of patients facing abnormalities in blood glucose such as diabetes and stress hyperglycemia.

The key elements of Novasource Gi Balance /Balance Plus compared to standard tube feeding are:

- Lower carbohydrate content; Total Energy (TE) 32-39% including slowly digestible carbohydrate, isomaltulose, to help manage blood glucose response[1]
- Inclusion of 100% soluble PHGG fiber 20-22g/L
- High quality protein, Protein Digestibility Corrected Amino-Acid Score (PDCAAS) of 1, TE 18-20%
- Higher Fat content, TE 39-45%, enriched in unsaturated fatty acids, especially monunsaturated fatty acids (MUFA)

Reduction in available carbohydrate content with simultaneous increase in the MUFA content has demonstrated positive outcome on lipid management and glucose control.[10]

Novasource Gi Balance and Novasource Gi Balance Plus may be used as sole source nutrition.

New Clinical Guidelines

Recent position statements and guidelines support the use of diabetes specific formulations for patients requiring support in the management of blood glucose

American Diabetes Association 2018	"Regarding enteral nutritional therapy, diabetes - specific formulas appear to be superior to standard formulas in controlling postprandial glucose A1C, and the insulin response"
International Specialist Dietary Foods Industries (ISDFI) 2018	Diabetes-specific formulas (DSF) are a safe, efficacious and cost-effective strategy to support the management of hospitalized patients with or at risk for poor glucose control. Evidence shows that use of DSF helps manage blood glucose levels, aiding recovery from illness or injury, and reducing health care costs.ISDI recommends hospital nutrition care that aims to achieve and maintain glycemic control. ISDI endorses the use of DSF, a category of foods for special medical purposes.
European Society for Parenteral and Enteral Nutrition (ESPEN)	Barozzoni et al "Carbohydrates and insulin resistance in clinical nutrition: Recommendations from the ESPEN expert group." Clinical Nutrition 36 (2017) 355-363 "Unlike standard formulas, evidence support the use of diabetes -specific formulas to support glucose management and reduce cost"
ESPEN 2018 Guideline on clinical nutrition and hydration in geriatrics	"...fiber containing products for EN have been shown to contribute to normal bowel function and are, thus, generally recommended. ...enterally nourished patients should not be deprived of the well-known beneficial metabolic effects of dietary fiber." Daily amounts of 25g are considered adequate for normal laxation for adults of all ages and can be considered[17]

Partially Hydrolysed Guar Gum

Benefits of PHGG

How it works

Many of the physiological effects of PHGG are due to its complete fermentation by colonic bacteria which leads to **the production of Short Chain Fatty Acids, (SCFA)** which exert various positive effects on colonic function.

PHGG fermentation increases production of beneficial SCFA, including butyrate, compared to other fibre sources such as: inulin, polydextrose and psyllium.[2]

PHGG and Diarhoea

SCFAs help regulate water and electrolyte absorption in the colon which may **help normalize stool consistency.**[2,3]

Increased bacterial mass from fermentation increases fecal bulk, which also contributes to **regularity of bowel movements.**[2]

PHGG and Microbiome

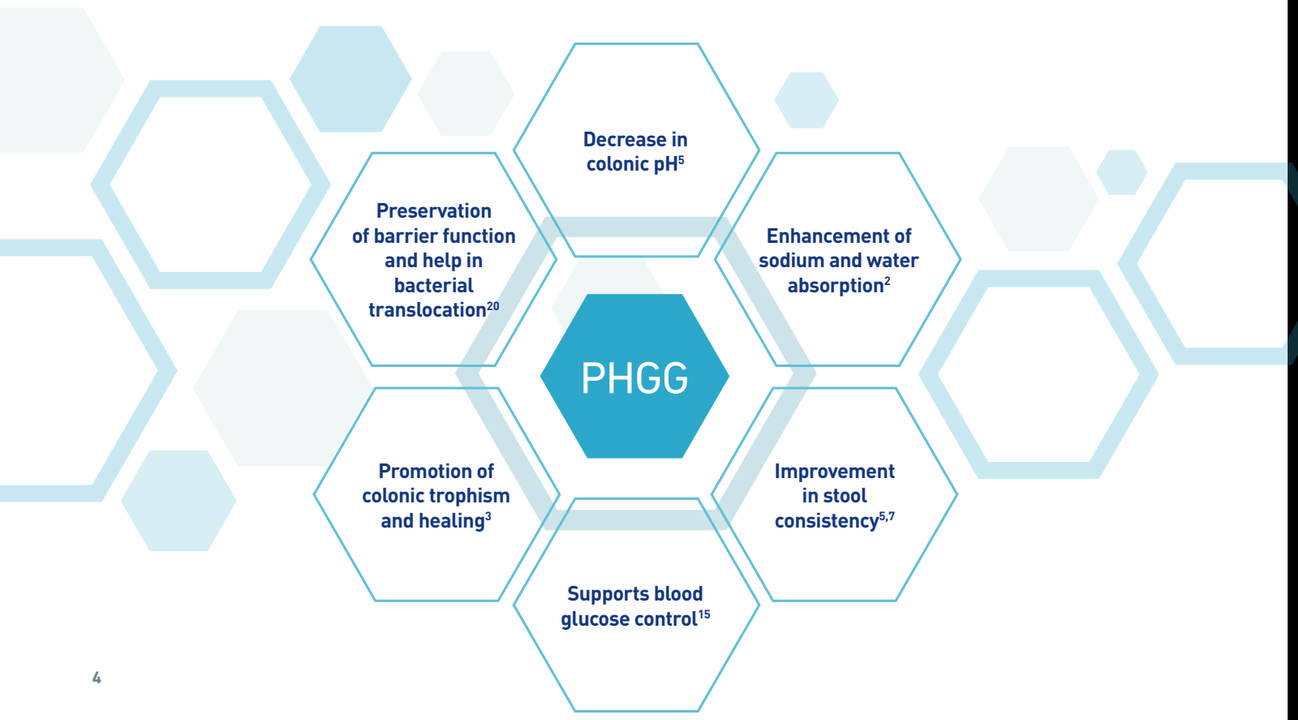
Butyrate is considered the most important SCFA for colonic health, and is the preferred fuel for colonic epithelial cells, which metabolize 60-70% of the SCFA produced.[9]

PHGG supports intestinal flora balance by promoting growth of beneficial bacterial strains, lactobacilli and bifidobacteria.[19]

PHGG and Blood Glucose

PHGG has been shown to significantly reduce plasma glucose compared to a fiber-free formula in ICU patients.[15]

PHGG significantly reduced plasma and capillary glucose levels, and insulin requirements, in patients with diabetes or stress induced hyperglycemia.[15]



The Science

Building on our well established experience our new products contain the following

Isomaltulose enriched carbohydrate blend

- Slowly hydrolyzed by intestinal enzymes allowing for slow release of glucose
- Low glycemic response to provide balanced energy
- Naturally occurring in honey and sugar cane juice[16]

Adapted Lipid Blend

- High amount of mono unsaturated fatty acids (MUFA)
  - known to improve glycaemic control and lipoprotein profiles in type II diabetes patients.[10]
- Low Saturated Fatty Acids (SFA) and Trans fat
  - a diet with decreased SFA and increased MUFA, was shown to improve insulin sensitivity[11]
- Meets EPA/DHA* requirements[12,13,14]

High Quality Protein

- 100% milk protein
- Protein Digestibility Corrected Amino-Acid Score (PDCAAS)** = 1.0
  - meaning it contains all essential amino acids in quantities that correspond to human requirements at higher concentrations than in the reference scoring protein.

Partially Hydrolyzed Guar Gum (PHGG)

- To prevent enteral nutrition induced diarrhoea in post surgical and in critically ill-patients supplementing enteral nutrition with PHGG is effective (Level A Recommendation).[17]
- PHGG can be used successfully in patients in enteral nutrition lowering the incidence of diarrhea. PHGG has been proven to be safe and effective in promoting gut health.[18]

* Eicosapentaenoic acid and docosahexaenoic acid - omega 3 fatty acids

** The PDCAAS method has been adopted by the United Nations Food & Agricultural Organization (FAO) and the World Health Organization (WHO) as the preferred method for evaluating food protein.

The Range

NOVASOURCE® GI BALANCE

per 500ml

- 1.0 kcal/mL
- 24 g protein
- 10 g of soluble fibre PHGG
- Osmolarity: 320 mOsm/l
- Neutral, vanilla, multifruit

Energy distribution

- 18% protein
- 39% carbohydrate
- 39% fat
- 4% fiber

NOVASOURCE® GI BALANCE PLUS

per 500ml

- 1.5 kcal
- 30 g protein
- 11g of soluble fibre PHGG
- Osmolarity: 370 mOsm/l
- Neutral and vanilla

Energy distribution

- 20% protein
- 32% carbohydrate
- 45% fat
- 3% fiber

Product Data and Nutritional Information

		NOVASOURCE® GI BALANCE			NOVASOURCE® GI BALANCE PLUS		
NUTRIENT	**UNIT**	**% KCAL**	**PER 100 ML**	**PER 500 ML**	**% KCAL**	**PER 100 ML**	**PER 500 ML**
Energy	Kcal		107	533		150	750
	kJ		446	2232		627	3133
Fat	g	39%	4.6	23	45%	7.5	37.5
of which							
- Saturates	g		0.8	4		1.2	6
- Monounsaturates	g		2.3	11		3.5	17.5
- Polyunsaturates	g		1.1	5.5		2	10
- EPA+DHA	mg		56.7	283		143	718
Carbohydrate	g	39%	10.5	52.5	32%	12	60
of which							
- sugars	g		2	10		2.5	12.5
- lactose	g		<0.2	-		<0.20	
Fibre	g	4%	2	10	3%	2.2	11
Protein	g	18%	4.8	24	20%	7.6	38
Salt (= Na (g) x 2.5)	g		0.19	0.96		0.21	1.05
Minerals							
Sodium	mg		77	385		85	425
Potassium	mg		164	820		160	800
Chloride	mg		97	485		100	500
Calcium	mg		100	500		100	500
Phosphorus	mg		65	325		80	400
Magnesium	mg		16	80		21	105
Iron	mg		1	5		1.2	6
Zinc	mg		1.2	6		1.2	6
Copper	mg		0.16	0.8		0.17	0.85
Manganese	mg		0.26	1.3		0.27	1.35
Fluoride	mg		0.1	0.55		0.11	0.55
Selenium	µg		8	40		8	40
Chromium	µg		9.7	48.5		11	55
Molybdenum	µg		9.4	47		10	50
Iodine	µg		18	90		18	90
Vitamins							
A	µg		115	575		122	610
D	µg		1.6	8		1.7	8.5
E	mg α-TE		2	10		2.5	12.5
K	µg		8	40		8.5	42.5
C	mg		12	60		11	55
Thiamin	mg		0.2	1		0.18	0.9
Riboflavin	mg		0.2	1		0.2	1
Niacin	mg		1.2	6		1.1	5.5
Niacin	mg NE		2.4	12		2.5	12.5
B6	mg		0.24	1.2		0.26	1.3
Folic acid	µg		34	170		36	180
B12	µg		0.4	2		0.4	2
Biotin	µg		6.4	32		6	30
Pantothenic acid	mg		0.6	3		0.7	3.5
Choline	mg		40	200		42	210
Osmolarity: mOsm/l			320			370	
water content: g/100ml			83			77	

RE= Retinol Equivalent NE = Niacin Equivalent αTE= Tocopherol Equivalent

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Definitions:

Microbiota: the microbes that live inside us and on us

Microbiome: the collective genomes of our microbial symbionts (the genetic material of the microbiota living within us)

Turnbaugh P., et al., The human microbiome project: exploring the microbial part of ourselves in a changing world. Nature 2007 vol: 449 (7164) pp: 804-10.

Nestlé Health Science

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