Product Information
– for professionals only –

nephea^{HD} Neonate 1 / nephea^{HD} Infant 2

from birth onwards / from 6 months

In Short

- nephea^{HD} is a Food for Special Medical Purposes (FSMP) for use in the dietary management of Pre-End-Stage Renal Disease (Pre-ESRD) or other conditions of Chronic Kidney Disease (CKD)
- protein-reduced and electrolyte-balanced formula for enteral nutrition in powder form
- for 2 age groups:
  > nephea^{HD} Neonate (**1**): for infants from birth onwards
  > nephea^{HD} Infant (**2**): for infants from 6 months
- with vitamins, minerals and trace elements in age-based, adequate amounts
- with carbohydrates (mainly Lactose) and HMOs
- enriched with DHA and ARA, as well as nucleotides, following the example of breast milk
- in 400 g tin

Produktprofil

nephea^{HD} is a protein-reduced and electrolyte-balanced formula and tube feed in powder form.

There are two types of nephea^{HD} products, which differ in their suitability for different age levels. nephea^{HD} Neonate (**1**) is suitable from birth onwards while nephea^{HD} Infant (**2**) is suitable after the 6th month of life. The products also differ in their fat, carbohydrates, vitamin D3, iron, and iodine content. (see table „Nutrition Information", p. 3/3)

Following the example of breast milk, nephea^{HD} contains lactose as its predominant carbohydrate and the human milk oligosaccharides (HMOs)2'-fucosyllactose (2'-FL) and lacto-N-neotetraose(LNnT). nephea^{HD} is enriched with docosahexaenoic acid(DHA) and arachidonic acid(ARA) as well as the nucleotides adenosine-5-monophosphate, cytidine-5-monophosphate and the sodium salts of guanosine,uridine and inosine 5-monophosphate.

nephea^{HD} is supplemented with vitamins, minerals and trace elements in age-appropriate, adequate amounts.

nephea^{HD} for 2 age groups
> nephea^{HD} Neonate (**1**)
for infants from birth onwards
> nephea^{HD} Infant (**2**)
for infants from 6 months

Indication

nephea^{HD} is a food for special medical purposes for use in the dietary management of Pre-End-Stage Renal Disease (Pre-ESRD) or other conditions of Chronic Kidney Disease (CKD), when a protein-reduced and electrolyte-balanced diet is indicated.

Important Notice Only use under medical supervision. Do not use in case of cow's milk protein allergy and severe disorders of resorption and digestion. Contains easily digestible carbohydrates. In case of disorders in glucose tolerance use only under careful control of metabolism. Can be given as a sole source of nutrition or as a supplementary feed. For enteral use only.

Good to know
nephea^{HD} differs from nephea in a higher potassium and phosphorus content.

Dosage and Use

nephea^{HD} can be given supplementary or according to energy requirements. The daily dosage depends on age and body weight of the infant and should be given in several single portions. Preferably begin with low, then gradually increasing doses. The individual dosage is calculated on the basis of daily energy requirements according to KDOQI guidelines and the Reference Values for Nutrient Intake (DGE/ÖGE 2025) and should be re-examined and adjusted regularly under medical control. nephea^{HD} is mainly given as a bottle feed but there are more possibilities for preparation.

Preparation

Measure or rather weigh out amount of powder according to required energy density. See pictograms. nephea^{HD} dissolves easily in warm water and has a milky taste.

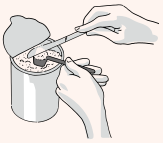
- **Bottle Feed** See pictograms.

Preparation of a Bottle Feed

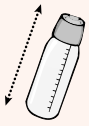

Clean and boil bottle and teat before use.


Boil water and leave to cool down to approx. 40 °C. Pour water into the bottle.


Loosen the powder with the scoop and take it up loosely.


Strip off powder with the back of a knife.


Determine the tara weight of the bottle. Carefully empty the scoop into the bottle. Weigh out and thus verify the amount of powder.


Put the lid safely on the bottle and shake.


Open bottle and fix the teat. Check drinking temperature (cheek test).

- **Formula or Tube Feed**

Stir required amount of powder into boiled water (cooled down to approx. 40 °C) and dissolve. Use a shaker or whisk where appropriate.

Sip feed: Open shaker. Ready to drink - or pour content into a clean cup for drinking.

Tube feed: Standard tubes can be used.

- **Weaning food or Pudding**

nephea^{HD} can be prepared as a weaning food or pudding.

- **Always prepare bottle feed or weaning food freshly.** Do not reuse any rest.

Good to know about Human Milk Oligosaccharides (HMOs)

Breast milk contains numerous bioactive ingredients such as immunoglobulins, hormones, and oligosaccharides. Human milk oligosaccharides (HMOs) are an essential constituent of human breast milk and represent the third most abundant part after lactose and lipids. HMOs consist of five basic components: glucose, galactose, N-acetylglucosamine, sialic acid and fucose. As indigestible carbohydrates, HMOs support the intestinal microbiome by serving as a food source for beneficial gut bacteria.

Stool characteristics such as consistency and frequency are affected positively and the overall well-being of the infant is improved. (1)

HMOs help prevent allergies (2) and have a positive effect on the immune system (3).

About 200 different HMOs are known. nephea[HD] contains 2´-fucosyllactose (2´-FL) which is the most prevalent HMO in human breast milk, and lacto-N-neotetraose.

2´-FL is a trisaccharide that protects against infectious diseases by preventing toxins and pathogens from adhering the epithelium. (4,5)

Lacto-N-neotetraose (LNnT) is a tetrasaccharide and also one of the most common HMOs.

It has a prebiotic effect and promotes the growth of bifidobacteria. (6)

Good to know about Nucleotides

Nucleotides are chemical molecules, the basic building blocks of the nucleic acids DNA and RNA. A nucleotide consists of a base, a sugar and a phosphate group. Nucleotides perform numerous vital regulatory functions, including cell division, protein biosynthesis, chemical energy transfer, as cofactors in the activation of enzymes or as intracellular messengers. Nucleotides are found in breast milk as free nucleotides. nephea[HD] contains a combination of five types of nucleotides: Adenosine-5-monophosphate, cytidine-5-monophosphate and the sodium sodium salts of guanosine-, uridine-, and inosine-5-monophosphate. The addition of nucleotides to infant formula promotes the development of the digestive system (7) and strengthens the immune system (7, 8, 9).

This is accomplished by promoting antibody formation and increased macrophage activity, as well as the release of anti-inflammatory cytokines.

In addition, some nucleotides have antioxidant properties. Nucleotides also have a positive effect on sleep rhythm (10). They play an important role in the regulation of the circadian rhythm, which affects the sleep-wake cycle. The gut microbiome (7, 8) also benefits from nucleotides by serving as a food source for beneficial gut bacteria. This, in turn, has a positive effect on stool consistency (11).

Advice for Dental Health:

Carbohydrates are indispensible for the nutrition of a child. Like breast milk nephea[HD] contains carbohydrates. Incorrect use of the bottle (frequent or continuous sucking) however can result in tooth decay (caries) and related damages to tooth health. Thus a bottle feed should only last for the time required for the food intake. Please advise the parents accordingly.

References:

(1) Bode L (2012). Human milk oligosaccharides: Every baby needs a sugar mama Glycobiology 22.
(2) Arslanoglu S, Moro GE, Schmitt J, Rizzardi S, Boehm G (2008). Early dietary intervention with a mixture of prebiotic oligosaccharides reduces the incidence of allergic manifestations and infections during the first two years of life. J Nutr.
(3) Petschacher B (2018) Humane Milch Oligosaccharide; Die Hebamme 2018; 31.
(4) C. Kunz, S. Rudolff (2019) Health promoting aspects of milk oligosaccharides.
(5) Bode L (2015). The functional biology of human milk oligosaccharides. Early Hum Dev. 91.
(6) Aleksandr A. Arzamasov, Aruto Nakajima, Mikiyasu Sakanaka, Miriam N. Ojima, Takane Katayama, Dimitry A. Rodionov, Andrei L. Ostermann, Human Milk Oligosaccharide Utilizattion in Intestinal Bifidobacteria Is Governed by Global Transcriptional Regulator NagR.
(7) Hess, JR, Greenberg NA (2012) The Role of nucleotides in the immune and gastrointestinal systems potential clinical applications. Nutrition in Clinical Practice. 2012.
(8) Yau, K (2003) Effect of nucleotides on diarrhea and immune responses in healthy term infants in Taiwan. J Pediatr Gastroenterol Nutr., 36(1).
(9) Buck, R (2004) Effect of dietary ribonucleotides on infant immune status. Part 2: Immune cell development. Pediatr Res.
(10) Sanchez, C (2009). The possible role of human milk nucleotides as sleep inducers. Nutr Neurosci.
(11) Uauy, R (1994) Nonimmune system responses to dietary nucleotides. J Nutr, 1994. 124 (1 Suppl).

	nephea[HD] Neonate (1)		nephea[HD] Infant (2)	
Delivery Unit	1 x 400 g tin	6 x 400 g tin	1 x 400 g tin	6 x 400 g tin
Article Number	xx-005-01041	xx-005-01046	xx-005-01051	xx-005-01056
Delivery to	Pharmacies, clinics			
Storage	Store in a cool, dry place.			

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NUTRITION INFORMATION

nephea[HD]		100 g powder		100 ml ready-to-use formula*	
		Neonate (1)	Infant (2)	Neonate (1)	Infant (2)
Energy	kJ	2109		295	
	kcal	504		71	
Fat, of which	g	28	27	4	3,7
saturates	g	11		1,6	
mono-unsaturates	g	9		1,3	
polyunsaturates	g	6		0,9	
of which					
Linoleic acid (LA)	g	5		0,8	
α-Linolenic acid (ALA)	g	0,4		0,06	
Docosahexaenoic acid (DHA)	mg	117		16	
Arachidonic acid (ARA)	mg	156		22	
Carbohydrate, of which	g	57	59	8,0	8,2
sugars, of which	g	25		3,6	
Lactose	g	23		3	
Fibre, of which	g	1		0,14	
2'-fucosyllactose (2'-FL)	g	0,7		0,1	
Lacto-N-neotetraose (LNnT)	g	0,3		0,05	
Protein	g	6,5		0,9	
Salt	g	0,5		0,07	
Vitamins					
Vitamin A	µg	210		29	
Vitamin D3	µg	13	8,5	1,8	1,2
Vitamin E	mg	5,5		0,8	
Vitamin K1	µg	22		3	
Vitamin C	mg	90		13	
Thiamin (Vit. B1)	mg	1,4		0,2	
Riboflavin (Vit. B2)	mg	1		0,14	
Niacin	mg	14		2	
Vitamin B6	mg	5,3		0,74	
Folic acid	µg	400		56	
Vitamin B12	µg	4,5		0,6	
Biotin	µg	95		13	
Pantothenic acid	mg	8		1,1	
Minerals					
Sodium	mg	195		27	
	mmol	8,5		1,2	
Potassium	mg	190		27	
	mmol	5		0,7	
Chloride	mg	207		29	
	mmol	6		0,8	
Calcium	mg	253		35	
	mmol	6,3		0,9	
Phosphorus	mg	170		24	
	mmol	5,5		0,8	
Magnesium	mg	45		6	
	mmol	1,8		0,26	
Trace elements					
Iron	mg	2,5	6	0,35	0,8
Zinc	mg	6		0,8	
Copper	mg	0,4		0,056	
Manganese	mg	0,3		0,04	
Selenium	µg	19		2,7	
Molybdenum	µg	25		3,5	
Iodine	µg	101	88	14	12

		100 g powder		100 ml ready-to-use formula*	
		Neonate (1)	Infant (2)	Neonate (1)	Infant (2)
FURTHER NUTRITION INFORMATION					
L-Carnitine	mg	8		1,1	
Choline	mg	140		20	
myo-Inositol	mg	26		3,6	
Taurine	mg	45		6	
Nucleotides	mg	16		2,2	

Due to the natural raw materials used the nutrition values may vary.

*Standard dilution
14 g nephea[HD] + 90 ml drinking water
= 100 ml ready-to-feed formula.
On each tin we clearly show the amount of powder which can be held by the scoop, provided.
However we recommend to at best always weigh out the amount needed for the preparation of the formula – pictograms on the tin show this in detail.

Osmolality
205 mosmol/kg

INGREDIENTS

nephea[HD] Neonate & nephea[HD] Infant

Maltodextrin, vegetable oils (sunflower oil, coconut oil, rape seed oil), ***lactose***, ***whey protein***, oil from Mortierella alpina, docosahexaenoic acid (DHA)-rich algae oil, calcium carbonate, sodium chloride, potassium citrate, monopotassium phosphate, magnesium carbonate, 2'-fucosyllactose (***milk***), Lacto-N-neotetraose (***milk***), vitamin C, monosodium phosphate, L-phenylalanine, L-isoleucine, L-valine, taurine, calcium phosphate, L-histidine, L-threonine, sodium carbonate, potassium citrate, emulsifiers: E 472c & sunflower lecithin, nucleotides (adenosine and cytidine 5-monophosphate, sodium salts of guanosine, uridine, inosine 5-monophosphate), ferrous sulphate, niacin, choline, inositol, zinc sulphate, L-carnitine, pantothenic acid, vitamin B6, vitamin E, vitamin B1, vitamin B2, manganese sulphate, cupric sulphate, folic acid, vitamin A, biotin, potassium iodide, sodium molybdate, sodium selenite, vitamin K, vitamin D, vitamin B12.

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