AMMEVA Fortifier AF S50 and AF M50

AMMEVA Fortifiers are innovative products, made from 100% human milk.

AMMEVA Fortifiers, for the first time, enable an exclusive human-milk diet for premature infants.

AMMEVA Fortifiers in the form of freeze-dried powder have a long shelf life and do not burden the infant‘s organism by an additional volume load.

Franz Koettnitz, MD
Founder
Medical Expert

Burkhard Rülicke
Founder
Technology Expert

Angelika Rülicke
Founder
Donor Expert

Postnatal nutrition with human fortifiers from AMMEVA

Medical progress has made it possible that the survival rate of preterm and premature infants is continuously increasing. Normal physical and cognitive development of premature infants depends, amongst others, on a balanced postnatal nutrition.

The risk of a lengthy and expensive treatment due to nutritional complications can be significantly reduced by a diet of 100% human origin (EHMD, Exclusive Human Milk Diet = mother's milk + human fortifier). This only succeeds, however, if the fortification is completely based on breast milk.

Particularly the burdensome necrotizing enterocolitis (NEC) can largely be avoided by native breast milk products.

Regardless of economic aspects, ethical principles of premature infants care are paramount. Every baby should receive optimal clinical care thus, achieving a sustainable healthy development. Especially for very preterm infants a nutrition with human milk in the sense of EHMD enriched with fortifiers should be included.

Human Milk Fortifier

Premature infants who physiologically would still be fed via umbilical cord require a different nutrient composition than provided by breast milk, which is naturally intended for 9-month-old babies.
If mother's own milk is not available, donor milk should also be fortified by adding nutrients.

Incorrectly, all fortifiers are referred to as human milk fortifiers even if they are usually produced on a bovine milk basis.

But especially premature infants often do not tolerate non-human proteins resulting in serious health complications.

Furthermore, the composition of human milk with its nutritional-physiological characteristics is very different from animal milk. By adding various nutrient concentrates, Adapting animal-based fortifiers to get them close to the characteristics of pure human breast milk is tried. However, this is only insufficiently possible, since the immunocompetence of human milk cannot be replaced.

AMMEVA human milk Fortifier

Human milk fortifiers from AMMEVA are entirely derived from human milk. AMMEVA is EU-wide the only fortifier manufacturer of 100% human origin.

State-of-the-art milk processing enables us to preserve 95% of the biological, especially immunocompetent characteristics of natural human milk.

Derived from the research results of Prof. Christoph Fusch, MD, Nuremberg, Germany, AMMEVA adapts the composition of the fortifier ingredients (lipids, proteins and carbohydrates) meeting the ESPGHAN recommendations (European Society for Paediatric Gastroenterology, Hepatology and Nutrition, Agostoni 2010).

Following these specifications, the main ingredients of the AMMEVA Fortifiers can be combined precisely and targeted. Hence, variations as well as adaptations according to the ESPGHAN recommendations are possible.

The powder formulation of the AMMEVA Fortifiers enables fortification without significant additional volume load for the infant. The powder has a very long shelf life at room temperature and can easily be shipped by mail.

The AMMEVA recommendation for use makes it easy for physicians and nursing staff to individually adapt fortification to the individual needs of the preterm infant and respective mother‘s milk.

Where does AMMEVA get the human milk from?

AMMEVA collects breast milk throughout Germany, exclusively from donors who fully breastfeed their own children and have enough milk for donation. When the donor stops breastfeeding, the donation time is also terminated for AMMEVA.

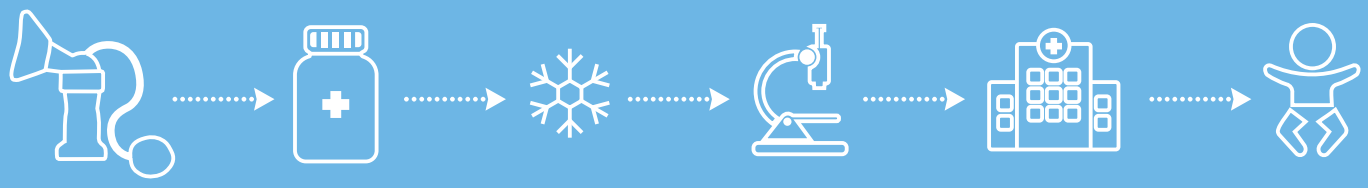
The potential donors get in contact with the AMMEVA donation service and all questions about eligibility and donation procedures are clarified. If interviews and subsequent examinations turn out to be positive, a contract is concluded between the donor and AMMEVA GmbH, taking account of all data-protection regulations.

The donated milk is collected by a sophisticated deep-freeze transport system and temporarily stored with AMMEVA. Quality tests by certified laboratories will follow. If the high quality standards are met, the donated milk is approved and will be subsequently processed. The quality testing follows the strict guidelines of of the HMBANA (Human Milk Banking Association of North America).

The Manufacturing of Fortifiers

The processing technology was developed and patented by AMMEVA. In contrast to the commonly used pasteurization practice (30 minutes at 63°C/145°F), our technology corresponds to state-of-the-art milk processing methods. The essential basis is a special freeze-drying technique, which is preceded by a few production steps such as separation and microfiltration processes in several stages as well as specific heat treatment to eliminate pathogenic microorganisms and other harmful substances.

Freeze-drying in combination with microfiltration procedures are particularly suitable, as important ingredients such as immunoglobulins are preserved.
In addition, by applying the freeze-drying technique, the powder has a long shelf life and is easy to use. AMMEVA produces variants of fortifiers, which differ in the content of proteins, carbohydrates and lipids.



Preventing complications

The mortality rate caused by NEK is 15-30%. After a NEK surgery, parenteral feeding for a longer period was necessary for about 25% of all newborns. 10% of all neonates with NEK have long-term nutritional challenges e.g., malabsorption and growth deficits as a result of resorption disorders or short bowel syndromes (8%). Postoperatively there is a long-term risk of ileus due to adhesions and stenosis.
(Cole 2008).

The introduction of the EHMD (Exclusive Human Milk Diet = breast milk plus fortifier from human milk) as a standard nutritional approach, can be considered a cost-effective treatment strategy for very low birth weight newborns in Germany.
(Scholz and Greiner 2019)

An exclusively human milk-based diet is associated with a lower rate of necrotizing enterocolitis than a diet of human milk and bovine milk-based products.
(Sullivan 2010)

Promising intervention

EMDH with breast or donor milk and target fortification with AMMEVA Fortifiers.

AMMEVA enables adaptations to the individual mother milk of premature infants. Following ESPGAN recommendations, three different fortifiers are available, which enrich low-, medium- or high-fat breast milk individually.

• More than 75% of the necessary fortifications of breast or donated milk is done with the AMMEVA-Fortifier AF M50 (Medium-Fortifier with 0.8 g fat, 0,7 g protein and 1.2 g carbohydrates (incl. HMOS) in 2.7 g of powder per 50 ml of breast or donor milk).

• In addition, AMMEVA Fortifier AF S50 (standard fortifier approx. 0.4 g fat, 1.0 g carbohydrates and 0.2 g protein total weight 1.6 g) is available. It is added to 50 ml of breast milk (Preparation: 1.6 g of powder filled up with 12.5 ml of of warm water, which is the equivalent of pure breast milk).

Currently in the planning phase

• The AMMEVA-Fortifier AF H50 indicated for very low-fat breast milk or donor milk (high-fat fortifier with 1.5 g Fat, 0.7 g protein and 1.2 g carbohydrates (incl. HMOS) in 3.4 g powder per 50 ml breast or donor milk).

• High-fat breast or donor milk can be enriched with the AMMEVA-Fortifier AF L50 (low fat fortifier with 0.3 g fat, 0.7 g protein and 1.2 g carbohydrates (incl. HMOS) in 2.2 g of powder per 50 ml breast or donor milk).

References in literature

"Use of targeted and adjustable fortification (Target Fortification) where possible, helps providing optimal nutrition; optimizing weight gain in preterm infants and preventing long-term cardiovascular complications." (Kishore Kumar 2017)

"A targeted fortification of breast milk. (Target Fortification) with low macronutrient content enhances the quality of nutrition and growth of preterm infants and is feasible in clinical routine." (Rochow 2021)

"An exclusively human milk-based diet is associated with a lower rate of necrotizing enterocolitis than a diet of human milk and bovine milk-based products." (Sullivan 2010)

"Compared with feeding extremely premature infants with mother‘s milk fortified with bovine milk-based supplements, a 100% human milk-based diet that includes mother‘s milk fortified with donor human milk-based HMF may result in potential net saving on medical care resources by preventing NEC." (Ganapathy 2012)

IMPORTANT NOTE: AMMEVA Fortifiers are nutrients for special medical purposes in the field of nutritional management of preterm infants. They are not suitable for sole nutrition. Infants, especially premature infants, may additionally need vitamins, iron, calcium, phosphorus supplements. AMMEVA Fortifier must only be used under medical supervision. Not for parenteral use.

Literature

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AMMEVA GmbH
Mielestrasse 2
14542 Werder/Havel
Germany

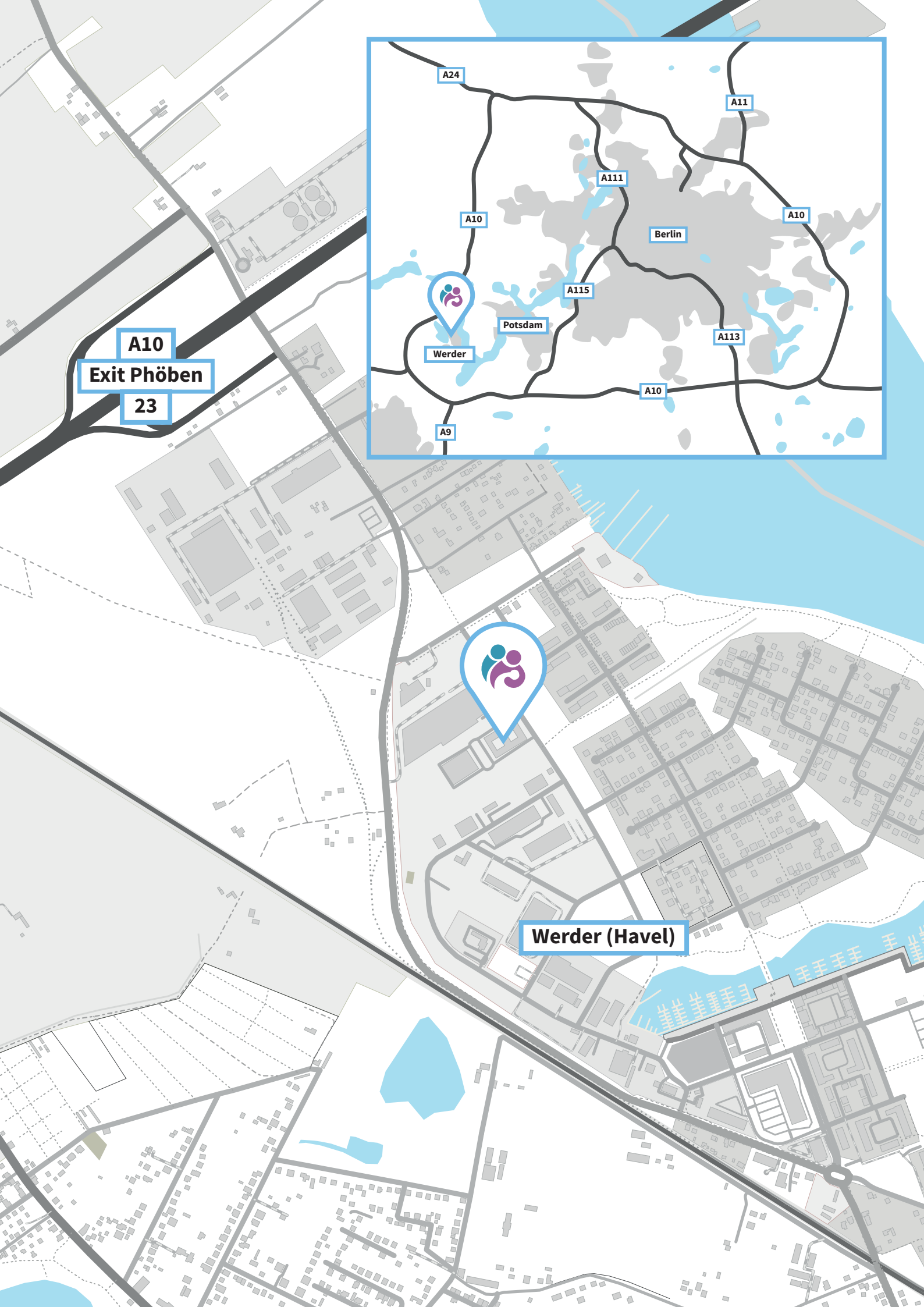
Clinical application / Quality Assurance
Franz Koettnitz, MD
fk@ammeva.de
Phone: +49 3327 741 43 70
Mobile: +49 157 774 562 62

Production / Quality Assurance
Burkhard Rülicke
br@ammeva.de
Phone: +49 3327 741 43 70
Mobile: +49 175 241 62 03

Donation Requirements / Donation Process
Angelika Rülicke
ar@ammeva.de
Phone: +49 3327 741 43 70

General Information
www.ammeva.de
mail@ammeva.de

Also visit us on social media
Instagram@ammeva.muttermilch
Facebook@ammeva.muttermilch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