

THE INGREDIENT MARKET

Special Nutrition Needs Fuel Clinical Innovation

A look at market opportunities for the three primary market segments of clinical nutrition.

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The clinical nutrition industry comprises several categories of products that are designed for people with specific nutritional needs that cannot be met through a normal diet. The three primary market segments can be identified as: infant clinical nutrition, enteral clinical nutrition and parenteral clinical nutrition.

Inside the Categories

The infant clinical nutrition segment includes products designed to meet the very specific nutritional needs required by infants between 0-6 months of age (standard infant formula) and products that are specially formulated to satisfy needs in infants with more special needs e.g. due to malnourishment, allergies or illnesses (special infant formula). The enteral clinical nutrition segment covers products that are consumed either orally, or via tube for people who are unable to meet their nutritional needs through an oral diet e.g. due to a lack of appetite or swallowing difficulties. Enteral nutrition products are found in liquid, semi-solid or powder form, with a

dense composition of macronutrients and smaller amounts of micronutrients to serve different medical purposes. They are absorbed through the gastrointestinal tract.

The parenteral clinical nutrition segment refers to products designed to be a last resort for meeting nutritional needs in patients, when this is not possible through an oral diet or tube feeding. These products are delivered intravenously i.e. straight into the bloodstream, when patients' gut function has been impaired; bypassing the gastrointestinal tract altogether. These products consist of amino acids, carbohydrates, lipids, micronutrients and water and do not contain dairy ingredients.

Factors Influencing Growth

Growth in the clinical nutrition market and the dairy ingredients used is driven by several factors such as population demographics e.g. certain elderly people and infants with special nutritional needs, increasing incidences of diagnosed diseases and awareness of nutrition benefits in disease management. The market also faces

a number of constraints, such as product pricing, lack of consumer confidence in the claims made by producers, and regulation of quality, testing, labeling, etc.

Asian Clinical Nutrition Growth

The infant clinical nutrition category is the largest primary segment, comprising around half of the total clinical nutrition market with products designed for infants between 0-6 months of age taking up the majority share. The infant formula segment has also been the fastest growing clinical nutrition category historically. It is estimated to remain so, albeit with a slower growth rate than earlier. The vast majority of infant formula is sold in powdered form, while sales of ready-to-drink products only capture a small share in most mature markets. Asia-Pacific is the largest region for sales of infant clinical nutrition products, estimated to account for more than 40% of global sales.

The enteral clinical nutrition category is the second-largest segment and makes up more than one third of the clinical nutrition market, with a value of more than US\$12 billion, growing slightly slower than the infant clinical nutrition category.

This growth can be attributed to a rising geriatric population, increasing incidence of diagnosed illnesses and lower cost of enteral nutrition products, when compared to parenteral nutrition.

The oral sub-category of products is significantly larger than the tube-fed one, with products in both liquid and powdered form. While North America is estimated to be the largest region for sales of enteral clinical nutrition products, closely followed by Europe, Asia-Pacific has been the fastest-growing region in recent years, which is expected to continue over a foreseeable future, due to a developing healthcare sector and increasing awareness of nutrition benefits.

Parenteral clinical nutrition is the smallest clinical nutrition segment, accounting for around 13% of the total market, with a value of around US\$5 billion. It is expected to show stable growth similar to historical rates. Hindering growth for these products is a rising preference for enteral nutrition products, due to lower cost and risk of infection during administration of intravenously delivered nutrition.

The US is the largest national market globally, albeit Asia-Pacific is growing at a faster rate (see figure 1).

Industry Sees Consolidation

Significant M&A activity has been observed in the global clinical nutrition in the past decade. This has led to five big com-

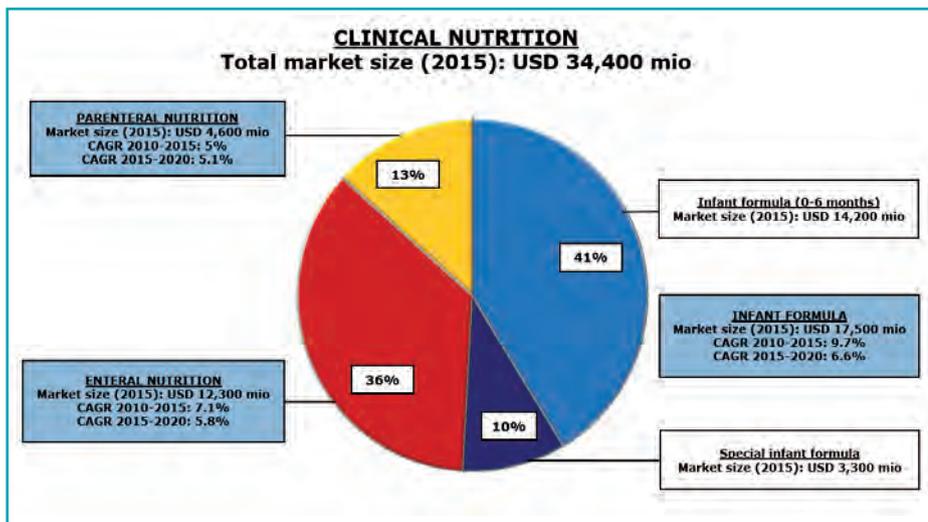


Figure 1: The global clinical nutrition market

panies dominating the majority of the global market, with the rest of the market shared between smaller multinationals and regional players. The five major companies include Abbott Laboratories and Nestlé, with strong presence in all regions, Danone, Fresenius-Kabi and Mead Johnson, with the latter focusing more on infant clinical nutrition.

Abbott is present in all critical regions and active on the two major primary market segments: infant clinical nutrition and enteral clinical nutrition. Abbott is estimated to be the global leader in adult nutrition with products such as Ensure and Glucerna, with sales of standard infant formula amounting to more than US\$1.5 billion and growing with products like Similac. Nestlé, also present in the important regions, is active in the two major primary market segments, with products like the Boost line designed for people with reduced appetite, who have difficulty meeting nutritional needs, and the NAN range of infant formulas.

Danone is also active in the two major primary market seg-

ments through its own brands, including Nutricia, which was acquired by Danone in 2007, and is estimated to have somewhat larger sales of infant clinical nutrition than enteral clinical nutrition. Fresenius-Kabi is active in all three primary market segments. It is estimated to be the global leader in parenteral nutrition and one of the leading suppliers of enteral nutrition in Europe. Mead Johnson is mostly active in the major primary segment and estimated to be the global leader in infant clinical nutrition, with a wide range of products designed for different stages and conditions.

In Asia, the big five companies meet competition from regional players, such as Otsuka and Ajinomoto in Japan, and Beingmate and Biostime in China, and joint ventures set up between smaller multi-nationals and local players e.g. SPSS.

High Quality Demand

Dairy ingredients are used for various reasons in the different market segments, except parenteral nutrition, where no dairy ingredients are used.

In infant clinical nutrition, Skimmed Milk Powder (SMP) serves as the base powder, but due to differences between the compositions of cow's milk compared with human breast milk, the addition of several other dairy ingredients is required. Furthermore, SMP used in infant formula is required to be of a higher quality, in order to meet the high microbiological standards in these products.

In cow's milk, casein is the most abundant protein found, comprising 80% of total protein content, with whey accounting for the remaining 20%. In human breast milk, on the other hand, the proteins consist of 60% whey and 40% casein, which suggests a need for the addition of whey protein. Demineralized whey protein (DWP) is the main whey protein ingredient used in terms of volume and is mainly added to the standard infant formula segment. Whey protein concen-

trate (WPC) and hydrolysate (WPH) are dominant in the special infant formula segment.

In standard infant formula, lactose is the primary source of carbohydrates, however, with a significant part of the volume being sourced by adding of SMP, DWP and WPC. Other carbohydrate sources (e.g. maltodextrin) are more commonly used in special infant formula.

In enteral clinical nutrition, the dairy ingredients applied are mainly protein ingredients with a high protein content, in order to increase the nutritional density of products and avoid lactose. Milk proteins are the main dairy ingredients used in enteral nutrition, with around half of this demand being for milk protein concentrates with a high protein content and the remaining for caseinates.

Whey protein concentrate is the other major dairy ingredient used in enteral nutrition, mainly in products with a high protein content.

Non-dairy ingredients, such as soy and pea protein concentrates, as well as maltodextrin, are increasingly being applied in clinical nutrition due to the ingredients being less expensive. Several emerging dairy ingredients have been identified in clinical nutrition, serving different purposes in product quality, nutrition and disease management. Prebiotics, such as galactooligosaccharides, are seeing increased usage in clinical nutrition to support healthy gut function. Other dairy protein ingredients such as alpha-lactalbumin, lactoferrin, micellar casein and native whey are increasingly being used. ▼

This article is based upon the report *Global Market for Clinical Nutrition and Dairy Ingredients 2015-2020* published by 3A Business Consulting. For more information, contact: Tage Affertsholt, Managing Partner at ta@3abc.dk.

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