

## Effect of $\beta$ palmitate and FOS on Infant Stool composition and Characteristics

New-borns who are breastfed typically have more frequent, softer stools. However, when breastfeeding is not possible for a short duration in certain situations like maternal infection, illness, certain medication usage, customized nutritional solutions are better than cow's milk

To address Gut issues including those of stool hardness, nutrition solutions that are structurally more comparable to human breast milk than standard nutrition solutions have been created. Nutrition solutions are currently being developed with fat blends comprising of triglycerides with a higher percentage of palmitic acid esterified at the sn-2 position ( $\beta$  palmitate). Additionally, FOS (fructo-oligosaccharides) are added to boost the water holding capacity of faeces.<sup>1</sup> Studies have shown benefit with combined effect of  $\beta$  palmitate and FOS on stool composition and characteristics<sup>1,2,3</sup>

### Effect of $\beta$ palmitate on absorption of fatty acids and stool consistency<sup>1</sup>

$\beta$  palmitate is better absorbed and can be a significant **source of energy** for the developing infant, when it is bound at the sn-2 position to the glycerol skeleton



The likelihood of forming insoluble calcium soaps, which results in harder stools, diminishes because of improved **fatty acid absorption** with  $\beta$  palmitate, which leads to an improvement in stool consistency and softer stools



### Effect of addition of FOS & stool consistency

Human milk oligosaccharides, act as substrate for **bifidobacteria** and **lactobacilli**, they defy digestion in the small intestine before reaching the colon, where they function as prebiotics<sup>3</sup>



Addition of FOS to **nutritional solutions**, gives a bifidogenic effect and increases the stool bulk, promotes softer stools by increasing water holding capacity of stools and reducing the GI transit time<sup>1</sup>

Studies have shown that combination of higher concentrations of  $\beta$  palmitate and FOS make them resemble human milk closely. They provide the following favourable effects in infants<sup>1,2,3</sup>

Beneficial effect on lipid metabolism



Improved calcium absorption



Hydration



**$\beta$  palmitate and FOS**

Increased levels of bifidobacteria



Reduced GI transit time



Stool softness



#### References :

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