

Gastroenteritis is a major cause of infant-deaths. Bottles, teats and screw tops are difficult to clean and can trap harmful bacteria that could make infants ill. Many infant cups have similar weak points. Sinapi Biomedical Engineering Company was approached in 2002 by the Department of Health and Groote Schuur Neonatology Department with the assignment of designing a feeding cup without spouts, straws, teats or rough surfaces. The Sinapi Cup evolved over the next few years and was launched in 2007.

What was needed was a multi-purpose cup that would not impede breastfeeding and would fulfil a host of specifications. Mixing replacement or supplementary feeds, cup feeding with success and easy cleaning were important criteria. It would have to be made of translucent plastic that could withstand autoclaving, boiling and exposure to the sun, have markings on the outside of the container in 25ml gradings and no grooves, ridges or sharp angles inside the container. And of course, it had to offer a low-cost solution!

Testing the waters

The first samples had spouts and nursing staff found the cup too small and experienced spillage when feeding. When feeding, milk is not poured down baby's throat, the baby sips from the cup! The cup needed to have a deep drinking well for this purpose. And so, with experience in the field, the final design was eventually reached, with an individually- packed cup inside the main holder, an instruction manual in seven languages and sealed in a polypropylene bag.

After feedback a few key adaptations were made, like changing the lid to a softer autoclavable thermoplastic elastomer. Cup feeding is used in all provinces now. In BFHI hospitals babies are tube-fed, breast-fed or cup-fed and cup feeding has been introduced in KMC units and Neonatal units for expressed breast milk and replacement feeding.

The Sinapi Cup Made in South Africa

The BFHI's Step 9 says "Give no artificial teats or pacifiers to breastfeeding infants" and the WHO says that bottle feeding must disappear from hospitals. This is the story of how Sinapi Biomedical rose to the challenge.



Easy to clean

The cleaning properties of the Sinapi Feeding Cup was tested and found superior to normal bottles by D.U. Bellstedt, Professor in Biochemistry at the University of Stellenbosch. He concluded that apart from the physical properties making the cup easier to clean, the material from which it is made repels protein matter, almost like a non-stick pan, in comparison to some bottles which are made from materials that attract protein products. Sinapi recommends that physical cleaning of the cup remains important, that it is dishwasher-safe to 90°C, can be wet-steamed in the microwave and boiled (100°C).

Sinapi hopes that cup feeding will play a vital role in supporting exclusive breast feeding and appeals to nurses to support this initiative which will help save lives, at no great cost. A true South African solution!



Sinapi Cup supports Breastfeeding

A UNICEF review on preterm breastfeeding in 2007 stated: Expressed breast milk should be offered by cup rather than bottle as this leads to higher rates of exclusive breastfeeding at discharge from hospital. The Sinapi cup supports this objective in the following ways:

- It is suitable for preterm infants who cannot suck yet
- It helps mothers overcome breast feeding complications (cracked nipples, mastitis)
- It prevents nipple confusion
- It is hygienic and safe and cannot be propped
- It prevents bottle role models
- It is easy to express into a cup
- It has a safe storage lid that seals watertight
- It can be put in the fridge or freezer

