



# bank on breast milk

To help save the lives of premature or sick babies, a Gold Coast initiative is paving the way for mothers' milk banks in Australia, writes **Robin Barker**.

**BREAST MILK IS** often referred to as "liquid gold" and, especially in the case of premature or sick babies, plays a crucial part in ensuring optimal neurological and physical development. For a variety of reasons, mothers can't always provide milk for their babies. Sometimes there are medical reasons for this, but there are times when breastfeeding falls apart because of incorrect advice, emotional, psychological and social hurdles, lack of support or clinical problems that can't be overcome.

When babies are full-term and healthy, modern formula is a satisfactory substitute, but if they are sick or premature, breast milk makes a vital contribution to their recovery. A source of perfectly balanced nutrition, breast milk is instantly absorbed and so places the least stress on these fragile babies. It also prevents further damage by protecting against a variety of infections to which sick or premature babies are vulnerable.

Despite huge improvements in the manufacture of formula, the variety of nutrient and immunological factors that are present in breast milk are not found in formula because breast milk is a living substance that constantly changes and is more complex than blood. Breast milk components vary from woman to woman, from breast to breast, during the course of a feed and over time. Yet, mysteriously, even though individual milk varies, babies thrive on all the variations.

## WHAT'S IN BREAST MILK?

We don't know *exactly* because a precise analysis of breast milk is impossible, but we do know there are more than 100 identified components arranged in correct proportions and compositions, so they are absorbed very efficiently. By looking at just a few of the basic ingredients, it's possible to demonstrate the unique qualities of breast milk. For example:

### Fat

After water, fat makes up the next biggest part of breast milk. Unlike the fat in formula (and other food) that has to be broken down in the liver before absorption, the fat in breast milk contains a special enzyme that makes the fat instantly digestible without going to the liver first. So far, the fats in breast milk cannot be replicated.

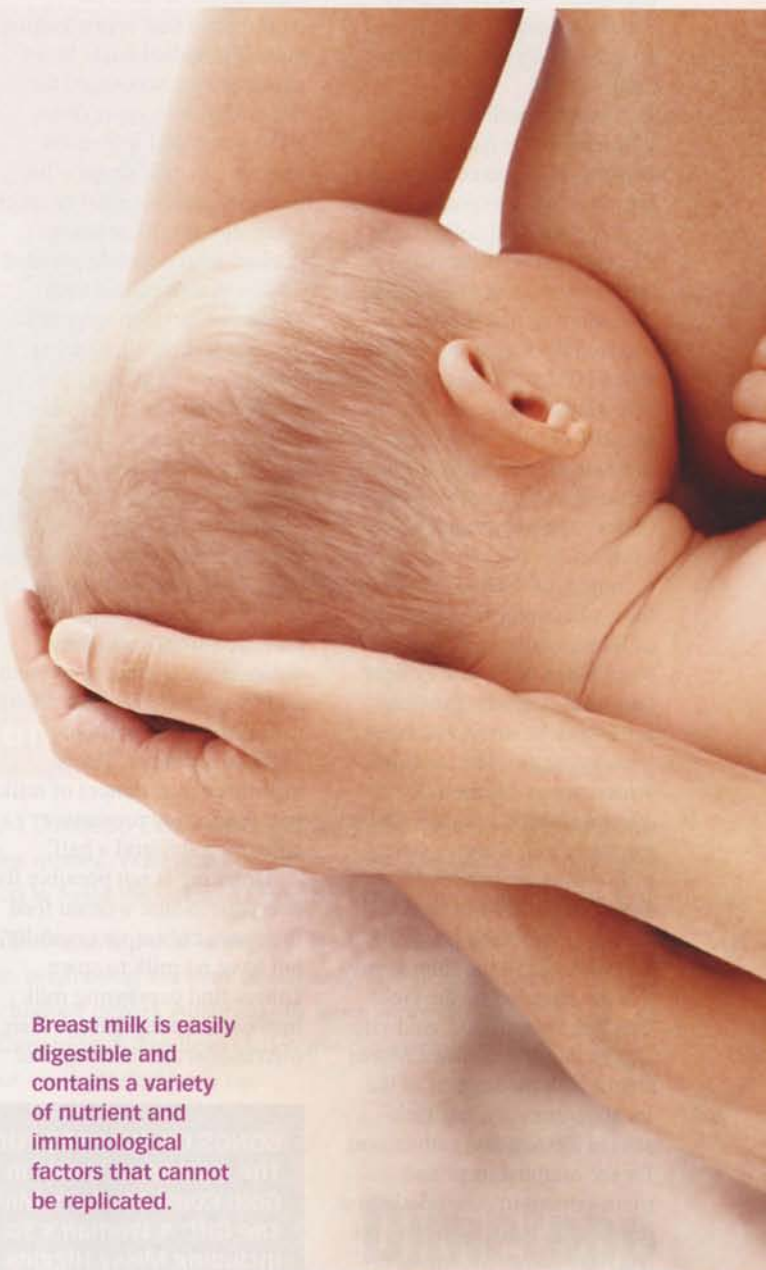
### Protein

The two types of protein are casein and whey. The casein or milk curd in breast milk is soft and small, and easy to digest, unlike the big and solid casein in cow or goat milk. The whey, the clear fluid left when milk clots, contains many of the active antibodies that protect babies from disease.

### Carbohydrates

The main carbohydrate is lactose, which supplies energy to babies' brains. The lactose in breast milk contains a carbohydrate known as "bifidus factor", which stops harmful germs from growing inside babies' guts. The lactose in breast milk also aids in the effective absorption of calcium.

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Breast milk is easily digestible and contains a variety of nutrient and immunological factors that cannot be replicated.

## DONOR MILK

Until the late 19th century, it was recognised that human milk was crucial for the survival of babies. When mothers couldn't (or, in the case of the aristocracy, chose not to) breastfeed, donor milk via wet nurses – friends, relatives or paid strangers – was the preferred option. Yet by the turn of last century, difficulty in finding wet nurses, plus an increasing reluctance to breastfeed by proxy for social reasons and an awareness of the possibility of disease transmission, led to greater attention being paid to commercially produced milk.

### Milk banks

In Australia, until the arrival of infections such as HIV and hepatitis C, it was common in hospitals to use expressed breast milk (pooled and boiled up in a big saucepan) donated by women with milk to spare, for premature or sick babies who required it. During the 1980s, when HIV and other viral infections became issues, the number of milk banks declined dramatically because of the difficulties of screening the donors and processing the milk safely.

Since the 1990s, thanks to the realisation of the benefits of human milk and greater knowledge of how to collect and store it safely, the donor milk bank business has been growing again. For example, America has 11, the UK has 17 and Canada has one. These numbers trail Europe, where milk banks are prevalent. Brazil has 300 milk banks. In contrast, Australia has none.

However, at the John Flynn Private Hospital on the Gold Coast in Queensland, midwife and lactation consultant Marea Ryan, with the support of the local community, has kick-started interest and enthusiasm for the establishment and management of Australia's first donor milk bank by setting up a private company, Mothers Milk Bank Pty Ltd.

"Australia is one of the few countries that does not have a centre for the pasteurisation of mother's milk," says Marea. "Many mothers with extra

milk have expressed their desire to help other families and, with a pasteurisation unit in place, we would have the opportunity to save lives and to greatly improve the health of these needy infants."

### How do milk banks work?

Potential donors go through a screening process, following similar protocols used for blood donors. This includes telephone interviews and blood tests. Donors must be in good health, be non-smokers, not consume alcohol within a certain period and not take medication. It must be emphasised that breastfeeding on an individual basis is not necessarily discouraged for these reasons – apart from HIV, active TB infections or some specific drugs – but extra precautions must be taken when donor milk is being pooled, stored and distributed.

The donor milk is then processed through steps that involve scrubbing, pouring, mixing, pooling, filling, pasteurising and lab testing. Milk is sorted into milk from mothers of full-term babies and milk from mothers of premature babies. In some banks, milk from mothers who don't eat dairy foods is sorted separately.

The amount of milk collected from each donor varies from woman to woman and from week to week. Most useful is a regular supply of small amounts. Thirty millilitres (one ounce) of milk will feed a tiny premature baby for a day and a half.

Donating is not possible for everyone. Some women feed their own babies successfully, but have no milk to spare. Others find expressing milk impossible, even though their own babies are thriving, and



donating takes up time that some mothers don't have.

However, there are many mothers around Australia with extra milk who would welcome the opportunity to help other families whose babies need human milk.

The federal government, through the Therapeutic Goods Administration, has approved the establishment of a milk bank, but \$350,000 is needed to get it up and running. And once we have one milk bank working and showing the enormous benefits to be gained, it will lead the way for banks being established all over Australia.

As Dr Lisa Amir, health professional research fellow at Melbourne's La Trobe University, notes, "A milk bank is a straightforward place. We do so much 'high-tech' work for our premature and sick infants in Australia, surely we can run milk banks? Common cents – sorry, sense – tells us we need to start banking this liquid gold." ■

*Robin Barker is the author of Baby Love, \$35, and The Mighty Toddler, \$35, both published by Pan Macmillan.*

### WHY HUMAN MILK BANKS ARE NEEDED IN AUSTRALIA

- The World Health Organisation and UNICEF strongly recommend the use of donor human milk when mother's milk is not available.
- Human milk contains growth factors that protect immature tissue and promote healing of damaged tissue. The unique composition of breast milk includes enzymes, growth factors, hormones and immunological and anti-inflammatory properties that cannot be replicated.
- Pasteurised mothers' milk has therapeutic benefits for babies who have failure to thrive, heart problems, malabsorption and short gut syndromes, renal failure, feeding intolerance, diarrhoea, sepsis and for premature babies and paediatric burns patients.
- Necrotising enterocolitis (NEC) is a devastating condition for premature babies in which the lining of the intestinal wall dies. Breast milk is a proven preventative for NEC.
- Donor human milk saves healthcare dollars.

### SONGS OF SUPPORT FOR A MILK BANK

The Australian music industry has shown its support for the Gold Coast Mothers Milk Bank through contributions to *The Gift: A Woman's Song*, a CD of music by female artists, including Missy Higgins, Lil'Fi, The Waifs, Deborah Conway and Stringmansassy. All proceeds go to this much-needed health initiative. The CD is available at ABC Shops, all record outlets, birth centres, community organisations and online.

For more information about the CD, the Mothers Milk Bank or for ways you can support this endeavour, go to [www.mothersmilkbank.com.au](http://www.mothersmilkbank.com.au)

