

## Safe products

The following baby bottles and sipper cups are readily available and BPA-free:

- Tommee Tippee Closer to Nature range and both narrow and wide neck bottles. Tommee Tippee sippy cups are also BPA-free.
- Avent has recently made the transition to BPA-free. Look for the new packaging and honey-coloured bottles.
- Milk and Tickles colour changing bottle.
- Happy Baby glass bottles.
- Heinz sipper cups, bowls, food storage and cutlery are all BPA-free.
- Green to Grow bottles.
- Adiri bottles.
- Fogoo kids canteens are stainless-steel, so BPA-free.
- Mam bottles.

## BPA as a health risk

While there is no doubt that BPA leaches from plastics and cans into food and drink, the ongoing dispute between scientists centres on how BPA affects human health and at what level of exposure these effects are seen. As is the case with many toxic substances, food and drug authorities have determined what they call a "safe" maximum daily limit of ingested BPA. The EFSA set this limit at 0.05 milligrams (50 micrograms) per kilo of body weight, despite some studies suggesting there are discernible health effects in rats exposed to levels of BPA as low as 0.025 micrograms per kilo of body weight. The *Journal of the American Medical Association* has criticised the "safe" levels that have been set by food and drug authorities around the world, suggesting they are based on old data and outdated testing methods. Other commentators express concern about the cumulative effects of ingested BPA.

BPA is an endocrine disruptor that mimics oestrogen in the body. In animal studies, consumption of BPA at levels lower than those deemed "safe" by food and drug authorities has been linked to increased risk of cancer, particularly breast and prostate, as well as early onset of puberty, reproductive dysfunction, birth defects and neuro-toxicity. Behavioural changes and reduced capacity to gender differentiate have also been observed.

While many studies have been done on the effects of BPA on animals, data on the effects in humans are a little thinner on the ground. Conflicting studies have been criticised by both the chemical suppliers and plastics manufacturers on the one hand and anti-BPA lobby groups on the other. Not surprisingly, many of the studies refuting the health risks associated

with exposure to BPA are industry-funded.

One of the first studies on the effects of BPA consumption in humans was released late last year. It found that high levels of BPA in urine were associated with increased risk of heart disease, higher risk of obesity and clinically abnormal concentrations of certain liver enzymes. The conclusion of the study, published in the *Journal of the American Medical Association*, was that "higher BPA exposure, reflected in higher urinary concentrations of BPA, may be associated with avoidable morbidity in the community-dwelling adult population". While this conclusion is somewhat vague, it does suggest there is a real, identifiable health risk.

Other human studies, although limited in scope and sample size, have nonetheless pointed to concerns that high levels of BPA are linked to high levels of testosterone in both men and women, polycystic ovarian syndrome in women, recurrent miscarriage and chromosomal defects in fetuses. Despite the limitations of these studies, collectively they suggest that further and more widespread research is necessary.

The National Toxicity Program in the US closely examined all available data late last year and concluded: "There is *some* concern for neural and behavioral effects in fetuses, infants, and children at current human exposures. The NTP also has *some* concern for bisphenol A exposure in these populations based on effects in the prostate gland, mammary gland, and an earlier age for puberty in females."

## Who is most at risk?

BPA is potentially dangerous to people of any age, but it is of special concern in babies and children. At most risk of excessive exposure to BPA are bottle-fed babies. According to the US Department of Health and Human Services, a formula-fed infant may consume up to 11 micrograms per day compared with an adult at 1.5 micrograms. BPA leaches from bottles when the surface of the plastic is scratched as a result of cleaning agents, when they are heated to high temperatures for sterilising and when they are filled with warm liquids or heated in microwave ovens.

Combined with the possibility of BPA leaching into formula from the lining of some cans, this leads to exposure well above that found in the general population. Given that the effects of BPA have been found to be most harmful at the early developmental stage of life, excessive exposure to BPA in infants is very worrying to say the least.

## How to avoid BPA

There are several things you should consider when buying packaged foods and plastics if you wish to minimise yours and your family's exposure to BPA. It's not always easy to identify cans that are lined with resins containing BPA, so if possible avoid canned foods — glass jars are safer. Canned baby formula in Australia is

generally safe. According to the manufacturers, Heinz, Karicare, S26, Novalac and Bellamy formulas are all packaged in BPA-free cans. Beware of liquid formulas, though, as these are more likely to contain BPA.

Sugary soft drinks are detrimental to health in other ways, including those with sugar substitutes, but if you must buy them, buy bottles rather than cans and keep them in the fridge. Most soft drink, juice and small water bottles are made from PET plastic, which does not contain BPA.

When buying plastics for food storage or baby bottles, there are two factors that will help to identify whether or not they contain BPA. Polycarbonate is the plastic most likely to contain BPA and can generally be identified by the way it looks and feels. Polycarbonate is a hard plastic, so when you press against it there is no give. It may be clear or coloured and will have a glass-like appearance. Plastics that feel a little flexible, such as those used for bottled water, or that have a milky appearance are not polycarbonate. Some baby-bottle manufacturers use a hard plastic similar in appearance to polycarbonate, but with a honey-coloured tinge. This plastic is BPA-free.

Choose stainless steel or aluminium flasks for kids' drink bottles. Not only can you be sure they are BPA free, but they won't harbour bacteria, either. Wrap sandwiches in brown paper rather than clingwrap or plastic sandwich bags as these may contain BPA (they are also bad for the environment). Most lunchbox-style containers are BPA-free but there are many food storage containers that

**Play it safe: school drink bottles house their contents for several hours every day.**

