



## DIY Detox by Sally Mathrick

# Not so fantastic plastic



**H**ow could we live without plastic? This ubiquitous, synthetic material can be shaped into virtually anything and has infiltrated virtually every corner of our modern world. If you look around right now, can you see any? A biro, phone, glossy labels, bottles of cleaning products, sticky tape, credit cards, sunglass frames, computers, food containers, traffic light covers, toothbrushes ...

Most plastic is a petroleum byproduct made from an array of organic polymers such as polyvinyl chloride (PVC), nylon and polyethylene. It is an amazing substance that provides ease, convenience and affordability like nothing before it. But there is the darker side to plastic.

The questionable effects of plastics on human cellular processes were hinted at more than 20 years ago. In early 1988, Soto and Sonnenschein's laboratory studies into cell proliferation and inhibition at Tufts Medicine School, Boston, USA, went haywire. They couldn't understand what was causing a runaway growth rate in their controlled trials. It took two years to identify the cause: a new plastic resin used in test-tube manufacture to make them less brittle. This accidental discovery provided evidence of "xenoestrogens" affecting cellular functioning.

"Xenoestrogens", literally meaning "foreign oestrogens", are chemicals that mimic the action of naturally occurring hormones. Hormones act on our whole being, significantly affecting growth and development as well as brain and reproductive function. Xenoestrogens seem to affect the same receptors as naturally occurring oestrogens, creating disruption to normal endocrine (hormone) function.

Evidence of plastics interfering with health has been mounting for decades. This issue challenges science because of imprecise exposure assessment, the large number of synthetic compounds, their essentially unknown effects and the interactions between compounds in living tissue.

In 1996, Colburn, Myers and Dumanoski published *Our Stolen Future*, detailing the scientific evidence of synthetic chemicals (from plastics and pesticides) affecting fertility and intelligence in animals and humans. More recent studies show an association between high levels of one plastic ingredient, bisphenol A (BPA, found in some hard plastics), and miscarriage in both humans and mice. Also, various cancers, ovarian dysfunction, altered immune function, altered behavioural effect (including hyperactivity), lowered sperm

count and alterations in bone formation are all hypothesised to be associated with various chemicals found in plastics.

Don't despair. As an adjective, "plastic" describes the ability to adapt and adjust. Neuroplasticity, for example, describes the ability of neurons in our central nervous systems to adjust and adapt to variations in our world.

### We are capable of major change

Our earth is our body. That is to say, all the components that create our bodies come from the earth. This ancient understanding of interconnectedness is re-entering mainstream consciousness. There is still hope that our future can be reclaimed with empowered collective effort. First, don't hold in your despair and worry, as doing so will hold your body in a state of tension and less able to undergo normal detoxification processes. Discuss, express and feel your emotions concerning this topic. Then get active. "Refuse, reduce, recycle" is the mantra and in that order.

- Fill your shopping bag with products that satisfy your answers to these questions: Is this the best plastic-free alternative? Do I really need this? Will it last a long time? Can it be re-used or recycled?
- Avoid PVC (shower curtains, clingwrap, plastic squeeze bottles with number 3). PVC is a proven carcinogen. Use waxed paper instead.
- Never use plastics for any hot food or drink. Reduce oily or fatty foods touching plastic.
- Some canned foods have a plastic inner coating — avoid them.
- Avoid scratched plastics, especially children's sippy cups.
- Seek out alternatives to plastic, or use plastic made from a safe polycarbonate (number 7 may be OK — ask if BPA is used).
- Avoid polystyrene cups.
- Buy in bulk.
- Use your consumer power. Write to your favourite product companies asking for plastic-free options — one letter from you represents hundreds of voices to them.
- Support alternatives to plastic: cornstarch containers (polylactic acid PLA); laminates made from potato, corn, rice and tapioca; cardboard from banana leaves.
- Buy stainless-steel or pyrex containers for lunchboxes.
- Invest in a water purifier and use a glass.
- Invest in quality products that have fewer


plastic components and longer warranties.

Because of cost, lack of incentive and other variables, few randomised trials regarding the removal of xenoestrogens from humans have been undertaken. Naturopathy, however, directs us to first remove the cause, namely exposure to these chemicals. Then, keeping the body's detoxification organs and channels functioning at an optimal level will minimise the presence of toxins, thereby reducing the negative effects.

Supporting liver function is undoubtedly paramount. Both phases of liver detoxification should be supported, but phase-two processes, glucuronidation, sulphation and glycation are most important. Glucuronidation is aided by balancing blood glucose levels and by supplementing a number of specific nutrients and amino acids.

Kombucha, the fermented drink, is believed to contain glucuronic acid and enhance glucuronidation. Increasing your intake of organic brassica vegetables (broccoli, Brussels sprouts, cabbage, cauliflower) provides good levels of indole, a compound that helps the phase two liver enzymes to clear hormones. Taking a balancing liver herb, such as St Mary's thistle, is certainly a good start. It's also an antioxidant that may help the body manage these hormone-mimicking chemicals and repair the damage they may cause.

Maintaining healthy bowel flora may help to prevent the biotransformation of xenoestrogens. This, combined with maintaining good levels of soluble fibre to help draw excess oestrogens in the bile through the body via faeces, may also protect your exposure to these. So regularly enjoy apples and pears in season, psyllium husks, fresh linseed meal and organic live yoghurts.

It may be unrealistic to think we can live without plastics, but we could certainly reduce our dependence on the petrochemical industries and reclaim our collective future by choosing creative alternatives. 

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