

contamination of plastics with TBT (tributyl tin), chlorine bleaching of the wood pulp used in nappies and possible respiratory implications.

The super absorbent gel contained in most disposable nappies is supposed to be non toxic and has been approved by the American Food and Drug Administration. However there is a distinct lack of research into the effects of extreme dryness on babies' thin skin and genitalia.⁶

The super-absorbent gel can include sodium polyacrylate crystals which forms a gel when in contact with urine. There are particular concerns about these super-absorbent chemicals entering the body via broken skin especially as sodium polyacrylate and other chemicals designed to increase absorbency have had to be removed from tampons as they were associated with the development of Toxic Shock Syndrome.⁷

Recent research has also suggested that disposable nappies keep babies' testicles at higher than normal temperatures. This has raised concern over whether this could pose a risk to their future fertility.⁸

TBT or tributyl tin is a very toxic chemical, it can contaminate certain types of plastic during manufacture. Recently commissioned research has shown significant levels of TBT in many brands of disposable nappy, babies may be in contact with up to 3.6 times the World Health Organisation's estimated tolerable daily intake. TBT is a recognised environmental pollutant, it is used as ship paint. It is known to disrupt the immune and hormonal systems of marine shellfish and there are international plans to phase out its use.⁹

Chlorine bleaching is used much less than previously in the bleaching of wood pulp for white paper products. Chlorine bleaching creates toxic dioxins, dioxins are considered to be extremely toxic, so much so that there is debate over whether safe levels actually exist.¹⁰ The issue when it comes to nappies is that the manufactures are not required to print the nappy materials or processing details on their packaging.

An independent study done in 1999 has shown that the airborne emissions of some disposable nappies can produce acute respiratory toxicity, including asthma like reactions, in normal laboratory mice. The researchers suggest that further study is required into a possible link between disposable nappies and the increasing prevalence of childhood asthma.¹¹

REFERENCES

1. Golding, J et al. (1997) Getting to the Bottom of Nappy Rash, University of Bristol.
2. Research currently being undertaken at the University of Queensland, coordinated by Dr Kate O'Brien, Lecturer in Environmental Modeling, Engineering Dept.
3. Link, A. (2003) Disposable nappies: a case study in waste prevention. Women's Environment Network.
4. Getting to the bottom of diaper rash. (1996) Medical Post. Toronto, 32(10), 53.
5. Primomo, J et al. (1990) The high environmental cost of disposable diapers. Journal of Maternal and Child Nursing, 15(5)279-84.
6. Nappies and the Environment. (2000) Women and the Environment.
7. Heal, C., Cooper, C. (2001) Other Implications of Disposable Nappies. Archive of Disease in Childhood, 85(3) 269.
8. Patsch, C. et al. (2000) Scrotal temperature is increased in disposable plastic-lined nappies. Archives of Disease in Childhood, vol.83, 364-8.
9. Heal, C., Cooper, C. (2001) Other Implications of Disposable Nappies. Archive of Disease in Childhood, 85(3) 269.
10. Costello, A. et al. (1989) The Sanitary Protection Scandal. The Women's Environment Network.
11. Anderson, R & J. (1999) Acute Respiratory Effects of Diaper Emissions. Archives of Environmental Health, 54(5)353-8.



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DISPOSABLE VS CLOTH NAPPIES

Making an Informed Decision

MYTHS ABOUT NAPPIES

1. There is no significant difference in the rates of nappy rash between babies wearing disposables and babies wearing cloth nappies. The most important factor in avoiding nappy rash is changing nappies promptly when soiled.¹
2. The environmental impact of disposables is much higher than for cloth even when the energy and water waste of washing and drying cloth is taken into account.
3. The new varieties of reusable nappies and even a good traditional flat nappy system can be user friendly.²
4. Even if you only use cloth nappies some of the time, you are still reducing waste.

FINANCIAL CONSIDERATIONS

These costs are based upon Australian data, collected in June 2003.

Full-time disposable nappy system

(Prices vary depending on store purchased from and brand used. 0 - 4yrs)

Newborn 50 per week - 50 Nappies @ 40c each = \$20/week = \$1040/year

3 months + 40 per week - 40 Nappies @ 50c each = \$20/week

50 biodegradable liners - 1pkt/ fortnight @6.95 for 3yrs \$542

1 year toddler night nappies @ 65c each = \$232

Total cost for full-time disposables with 1 year of toddler night nappies and biodegradable nappy liners = \$3894

Total cost for full-time disposables for two children would be a total of \$7,788

Full-time square cloth nappies for 3 years with some fitted nappies for outings using earth-friendly detergents and quality fitted nappy covers

10 Muslin or Flannelette for newborns \$70

24 Terry Towelling Nappies for newborn to 3 yrs \$60

24 cloth nappy liners (optional) \$72

6 Snappy closures to hold nappy on or 24 nappy pins \$30

12 nappy covers all sizes @ \$15 ea \$180

Earth-friendly detergents and nappy soak @ \$2.60/week \$408

Subtotal \$820*



This information was sourced from The Royal Women's Hospital website. For more information please visit www.rwh.org.au

Optional Extras

6 fitted-cloth nappies & liners for outings \$113.70
50 biodegradable nappy liners per fortnight \$538
Total \$1472*

Most of these items can be re-used on a second child, additional covers and closures and detergents will be required at a cost of \$618 per child. This cost is spread over 3 years at \$3.96/week.

Full-time cloth nappies on the cheap

24 nappies @ \$30 pkt \$60
12 - 24 cloth nappy liners @ \$3 each \$72
18 pull-on nappy covers @ 4.95 ea. \$89
6 Snappy closures to hold nappy on or 24 nappy pins \$30
Earth-friendly detergents and nappy soak or bi-carb, vinegar and essential oils @ \$2.60/week \$408
Subtotal \$659*

Full-time one-size fits all fitted-cloth cloth nappies

24 Fitted Cloth nappies, liners and covers \$499
50 biodegradable nappy liners per fortnight \$538
Earth-friendly detergents and nappy soak \$2.60/week \$408

Total without liners \$907*
Total with liners \$1445*

**With one disposable per night @ 40c each/ 3 years, add \$427 to these cloth nappy costs.*

Most of these items can be re-used on a second child, additional covers and closures and detergents will be required at a cost of \$527 per child spread over 3 years at \$3.37/week

Nappy Wipes are an additional cost. If you purchase a commercial, disposable brand on a regular basis @ \$5 per fortnight, this adds up to an extra \$390. Re-usable Nappy Wipes that can be stored easily in your nappy bag and on your change table - will cost approximately \$65 for the same period

ENVIRONMENTAL ISSUES

It is a common misconception that there is very little difference between disposable and reusable nappies in overall environmental impact. This misconception is based upon two scientific reports on the lifecycles of nappies produced by Procter and Gamble in 1989 and 1990. (Procter and Gamble are the makers of Pampers disposable nappies)

Independent studies have since critiqued these studies finding that the assessment was flawed in that it focused on the environmental impact during the nappy 'use' phase without proper assessment of the impacts of both the production and disposal stages of the nappy lifecycle.

A subsequent study conducted by Landbank Consultancy in 1991 had the following findings;

Impact per Infant per year³

	Cloth	Disposable	Impact difference
Energy	2532MJ	8900MJ	3.5x
Waste Water	12.4 cubic metres	28 cubic metres	2.3x
Raw materials: non renewable	25kg	208kg	8.3x
Raw materials: renewable	4kg	361kg	90x
Domestic Solid waste	4kg	240kg	60x
Land for raw materials	1,150-6,800ha	29,500-32,300ha	4-30x

Australian research is currently being undertaken by the University of Queensland. Results are based on a full life cycle assessment of 2.5 years of nappy wearing by one child, assuming 6 disposable or 9 cloth nappies are used each day.

Preliminary results have indicated that cloth nappies use more water than disposables. Half of the water consumption of cloth nappies is used in the cotton production, the other half in washing. The water used to wash nappies represented 3-5% of the household water consumption.

It should be noted that the water consumption between individual households varied greatly and it would be simple to use cloth nappies in a water wise household and still use less water than in a regular household using disposable nappies.

"Napisan" and equivalent nappy soaking systems have a negligible effect on the waste water treatment plants, as it will be fully reduced in the sewers, if not in the nappy bucket.

Commercially washed nappies use more than double the water of home washed nappies. This is partly due to the water involved in growing cotton as commercial nappy wash services do not reuse the nappies themselves as much as home washed nappies.

Disposables require over 26 times the land area for growing raw materials compared to home washed cloth nappies, and just over 10 times the land area for commercially washed cloth nappies.

HEALTH ISSUES

As previously mentioned neither nappy type has the edge over nappy rash, as long as the baby is changed as required.⁴

A much more potentially serious problem associated with disposable nappies is the ease of disease transmission via faeces left on the nappy and then disposed of in regular household waste. More than 100 enteric viruses are excreted in human faeces, including hepatitis and polio (if the live vaccine is used for immunisation) Viruses can live for months creating risks to both sanitation workers and contamination of ground water in landfills.⁵

Research into the long term health impacts of different nappy types is in its infancy. Areas of concern include the absorbent gels in disposables, raised scrotal temperatures, the