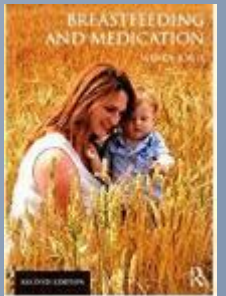


Breastfeeding and Climate Change Event

But it's just about milk isn't it?

Dr Wendy Jones MBE
Breastfeeding and Medication Pharmacist



Why is breastmilk different to artificial formula & so special?

- › Breastmilk is a living fluid
- › It changes throughout the day, over time, according to the area where mother and baby live
- › It changes according to infections met by mothers and babies
- › It varies in taste
- › It provides more factors to protect the baby than we yet know
- › Formula is a standardized product, always the same, meets the nutritional needs of many babies.
- › Formula is used by the majority of mothers and babies in 2022



Breastfeeding helps protect babies against:

- ear infections
- gastro-intestinal infections
- chest infections
- urine infections
- childhood diabetes
- eczema
- obesity
- atopic diseases
- risk of SIDS



Renfrew M and Hall D Enabling women to breast feed -Is a challenge for the health professions· BMJ 2008;337:a1570

Breastfeeding helps protect mothers against:

- ovarian cancer
- breast cancer
- increased likelihood of returning to their pre-pregnancy weight
- delayed resumption of the menstrual cycle with consequential lower loss of iron stores
- Lifetime risk of cardiovascular disease



'Breastfeeding is associated with a reduced maternal cardiovascular risk: Systematic review and meta-analysis involving data from eight studies and 1,192,700 parous women' by Lena Tschiderer *et al.* was published in the *Journal of the American Heart Association* on Tuesday 11 January 2022.

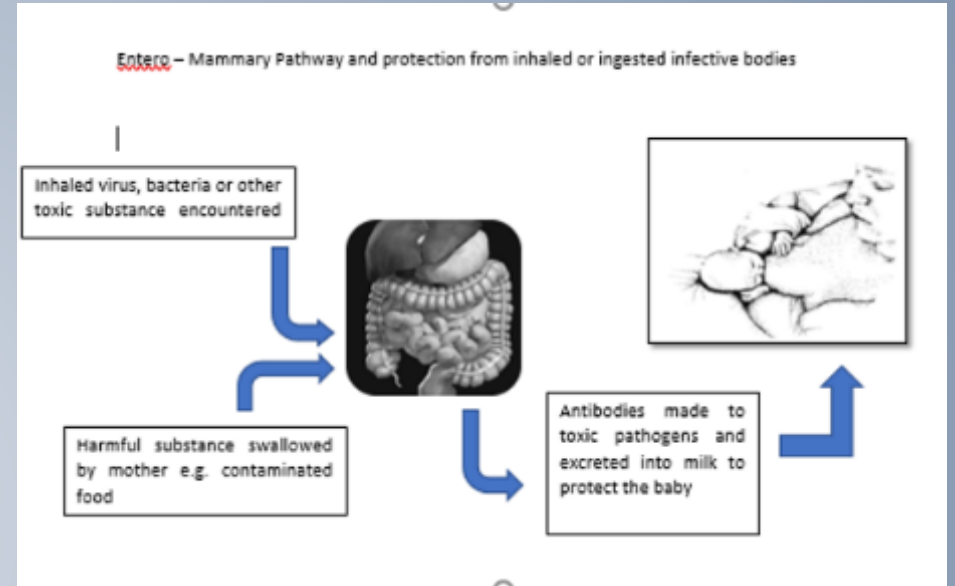


If a baby is not breastfed..

- baby receives none of the protective effects of the immunological components of breastmilk
- baby has increased risk of receiving milk contaminated during preparation and storage.

Is it surprising more babies who are bottle-fed suffer from gastro-enteritis and too many end up being admitted ?

Economic analysis in 2012 showed that approx. £1.34m/annum could be saved in treatment costs by increasing the current exclusive breastfeeding rate at four months (7%) to 21%.



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https://www.unicef.org.uk/wp-content/uploads/sites/2/2012/11/Preventing_disease_saving_resources.pdf

Risk factors for gastro-enteritis if baby is formula fed



- Free iron in the gut (which bacteria thrive on)
- No lacto-ferrin (to mop up free iron)
- No bifidus factor (so increased pH conducive to bacterial growth)
- No oligosaccharides (to inhibit attachment of pathogens)
- No Secretory IgA (protective coating for gut)
- No entero/broncho-mammary pathway (for antibody production)
- No white cells (to destroy bacteria)
- No lysozyme (to destroy bacteria)
- No epidermal growth factor (for maturation)
- No viral fragments (to stimulate antibody response)
- No anti-inflammatory molecules (to moderate response to pathogens)





Breastfeeding causes depression?

- It is the pressure of being told breast is best that causes women to struggle with mental health we are told
- The mothers told me that it was pressure to stop that made them feel worse
- They said they wanted to be listened to and to be signposted to breastfeeding support
- What about professional's personal experiences and beliefs



Use of formula milk

- Almost three-quarters of mothers (73%) had given their baby milk other than breastmilk by the age of six weeks according to Infant Feeding Survey 2010.
- This proportion rose to nearly nine in ten (88%) by six months
- But many women have given up breastfeeding before they intended leading to feelings of loss and grief.





Breastfeeding importance

Immunisation is preventative medicine par excellence. If a new vaccine became available that could prevent 1 million or more child deaths a year and that was moreover cheap, safe, administered orally.....it would become an immediate public health imperative.

Lancet 1994

If breastfeeding did not already exist, someone who invented it today would deserve a dual Nobel Prize in medicine and economics

Lancet 2016

A collection of vintage glass bottles and a small medicine bottle. On the left, there is a large, dark amber glass bottle with a stopper. Next to it is a tall, slender, light green glass bottle. In the foreground, there is a small, dark blue glass bottle with a yellow label and a white stopper. The background is a light blue gradient.

Prevalence of chronic disease in women of child bearing age

- › Chronic disease is increasing, currently 10-20% (Scime 2021)
- › Many auto immune diseases are linked with being formula fed as an infant
- › Women are more likely to develop auto immune diseases
- › Needing medication is a barrier to breastfeeding (McClatchey 2018)
- › We don't have research on > 50% of medications, only 2% have strong evidence
- › Women with chronic diseases are 2 and a half times more likely to not meet their breastfeeding goals because of medication (Odom 2013)



Cost savings (2012 data)

- For just five illnesses (breast cancer in the mother and gastroenteritis, respiratory infections, middle ear infections and necrotising enterocolitis in the baby),
- Moderate increases in breastfeeding would translate into cost savings for the NHS of **£40 million** and tens of thousands of fewer hospital admissions and GP consultations.
- If half of those mothers who currently do not breastfeed were to do so for up to 18 months of their lifetime, there would be 865 fewer cases of breast cancer with cost savings to the NHS of over **£21m**

https://www.unicef.org.uk/wp-content/uploads/sites/2/2012/11/Preventing_disease_saving_resources.pdf



The carbon footprint of artificial formula

- › For the UK alone, carbon emission savings gained by supporting mothers to breastfeed would equate to taking between 50,000 and 77,500 cars off the road each year
- › Powdered infant formula can be made safely only with water that has been heated to at least 70°C, giving an energy use equivalent to charging 200 million smartphones each year
- › breastfeeding for six months saves an estimated 95-153 kg CO₂ equivalent per baby compared with formula feeding
- › The production of unnecessary infant and toddler formulas exacerbates environmental damage and should be a matter of increasing global concern.

Joffe N, Webster F Shenker N Support for breastfeeding is an environmental imperative. *BMJ* 2019; 367:l5646

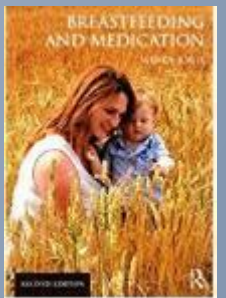


The dairy industry

- › 1 kg of milk is used to make 200g of milk powder.
- › The water footprint of milk powder is 4,700l/kg
- › The food industry (particularly dairy) produces about 30% of global greenhouse gases
- › 2009 data: 550 million formula cans (86k tons metal and 364k tons of paper) sent to landfill
- › Marketing accounts for £36 for every child born: at what cost to health let alone the economy and climate???
- › Only 40-50 formula processing plants worldwide – cost of transport?

Stop breastfeeding and take this medicine?

Advising a mother to stop breastfeeding to take medication should be the final resort having taken into account the risk of denying the baby the right to continued breastfeeding balanced against the need for any particular drug, given full, quantitative data from an expert source



Adverse drug reactions in breastfed infants: less than imagined

Medication shortens duration of breastfeeding because of specific advice or subtle cues by healthcare professionals.

100 possible individual reports of adverse events identified:

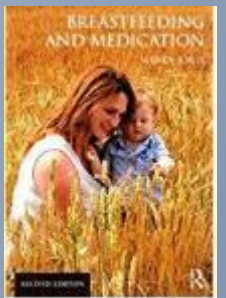
- none definite,
- 53 possible,
- 47 probable

•37% cases of adverse events in new-born, 63% < 1 month, only 22% in babies > 2 months

•Incidence of adverse events approximately 1 in a million



Anderson PO, Pochop SL, Manoguerra AS. Adverse Drug Reactions in Breastfed Infants: Less Than Imagined. Clinical Pediatrics. 2003;42(4):325-340.





Conclusion

- › Breastfeeding isn't just about milk transfer
- › It protects the health of mother and baby
- › Chronic diseases are increasing in prevalence and may be linked to feeding as a baby
- › Treatment of chronic diseases presents a cost to: the patient, the family, the NHS
- › Chronic illness leads to the use of climate resources to treat the symptoms of the patient and the production and preparation of formula with consequent costs to the planet



The cost of not supporting breastfeeding is immeasurable

Breastfeeding matters



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