



# Breastmilk – Latest news on long term effects and functional benefits

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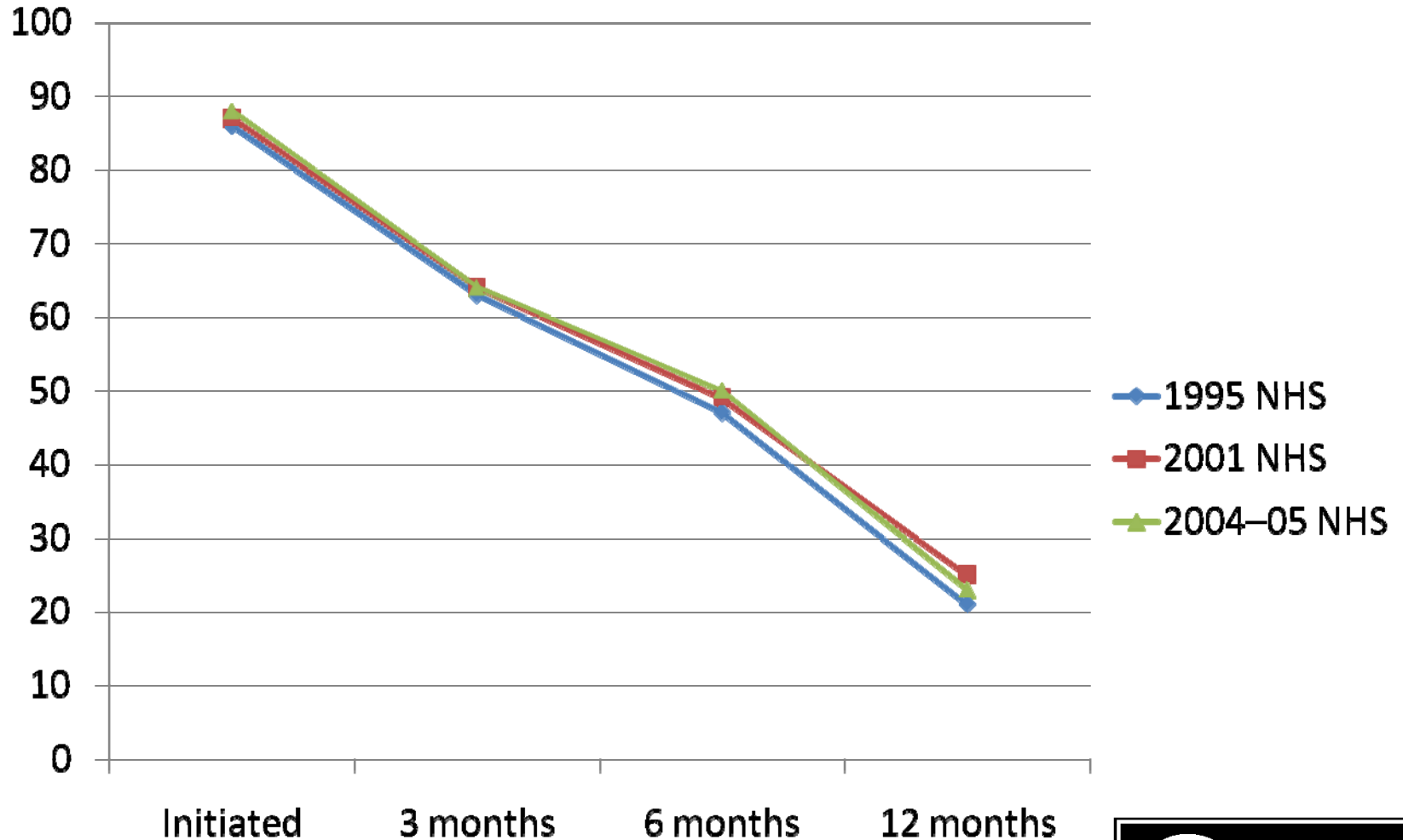
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# Outline

- Breastfeeding in Australia
- Benefits associated with breastfeeding
- Levels of evidence
- Breastfeeding research
- PROBIT study
- Recent reviews
- Summary

# Breastfeeding in Australia



# Associated Benefits

- ↓ Infections – gastro, respiratory, AOM
- ↓ Cardiovascular risk – cholesterol, HT
- ↓ Overweight, Obesity, Type 2 Diabetes
- ↓ Autoimmune diseases
- ↓ Malignant diseases
- ↑ Intelligence

# Levels of Evidence

- **I** - systematic review of Level 2 studies
- **II** - a randomised controlled trial
- **III-1** - a pseudo-randomised controlled trial
- **III-2** - comparative studies with concurrent controls
- **III-3** - comparative studies without concurrent controls
- **IV** - case series with either post-test or pre-test/post-test outcomes



# Breastfeeding Research

- Almost entirely observational
- Unethical to randomise, difficult to blind
- Confounding factors – myriad
  - Education and Intelligence
  - Socioeconomic
  - Lifestyle
  - Health



# Breastfeeding Research

- Recall bias
- Differences in study design
- Differences in definitions
  
- Hence outcomes are associated

# Current Research

- PROBIT (Promotion of Breastfeeding Intervention Trial) study
  - RCT – BFHI model support program v usual advice
  - 31 Belarussian Maternity Hospitals
  - All intended to breast feed
  - 17046 infants enrolled, 96.7% at 12 months, 81.5% at 6.5 years
  - Followed at 1, 2, 3, 6, 9, 12 months and 6.5 years

# PROBIT

- Exclusive BF at 3 months
  - 43% intervention v 6.4% control
- Exclusive BF at 6 months
  - 7.9% intervention v 0.6% control
- Any BF at 12 months
  - 19.7% intervention v 11.4% control
- intervention mothers were almost twice as likely to breastfeed subsequent child exclusively for 3 months

# PROBIT

- At 1 year
  - Significant reduction in gastrointestinal tract infection (9.1% vs 13.2%)
  - Significant reduction in atopic eczema (3.3% vs 6.3%)
  - No effect on respiratory tract infection (39.2% vs 39.4%)

# PROBIT

- At 6.5 years – Allergic Disease
  - No reduction in risk of asthma, eczema or hay fever
  - Eczema reported less objectively than in 1<sup>st</sup> year
  - Prevalence of all allergic symptoms and diagnoses lower in PROBIT children than in other Western industrialised countries

# PROBIT

- At 6.5 years – IQ and teacher rating
  - Higher IQ with increased duration of any BF and increased duration of exclusive BF
  - Teachers academic rating, significant difference for exclusive BF >3-<6 months, not significant for exclusive BF >6 months
  - Prolonged and exclusive breastfeeding improves cognitive development
  - Is it the milk or the feeding interaction or both?

# PROBIT

- At 6.5 years – Height, Weight, Adiposity, BP
  - No significant intervention effects found on
    - Height
    - BMI
    - Waist or hip circumference
    - Triceps or subscapular skinfold
    - Systolic or diastolic BP
- Not comparing breast v formula
- Less overweight (13%) and obesity (8%)



# Clinical Reviews

- Hoddinott, P., Tappin, D. & Wright, C. Breast feeding BMJ 2008; 336:881-7
- Ip S, et al Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries. Agency for Healthcare Research and Quality. April 2007. (>9000 abstracts, 29 systematic reviews/meta analyses, 43 primary studies)

# Infection

- Reduced risk diarrhoea in 1<sup>st</sup> year with any BF (however significant confounding factors)
- Reduced risk of serious respiratory disease in 1<sup>st</sup> year with exclusive BF >4 months
- Reduced risk acute otitis media (23% reduction ever BF, 50% exclusive BF 3-6mo)

# Atopy

- Results are equivocal
- Atopic Dermatitis – reduced risk for high risk exclusively BF for >3months
- Asthma – BF for > 3mo reduced risk in early childhood



# Cognition

- Significant confounding factors
- Adjusting for maternal education and/or intelligence reduces advantage associated with BF

# Obesity

- Many confounding factors
- The more confounding factors that are considered the less protective the effect of BF
- Overall reduced risk of obesity in adolescence and adulthood when BF v non BF
- Greater protection with greater duration

# Cardiovascular

- Any BF v never BF may reduce BP slightly
- Any BF v never BF may reduce total and LDL cholesterol
- Any BF v Never BF may reduce risk of Type 2 diabetes
  
- Serious study limitations, confounders



# Type 1 Diabetes

- BF >3 months reduced risk of developing type 1 Diabetes (19% - 27%)
- Possible recall bias, confounding factors



# Childhood Leukaemias

- Any breastfeeding for at least 6 months reduced risk of acute lymphocytic leukaemia and acute myelogenous leukaemia

# Improving BF duration

- High % initiation but declines very quickly – similar pattern in most developed countries
- ‘Breast is best’ not good enough
- Additional professional or lay support in early days and weeks
- Significant structural/societal change

# Summary

- Complex living fluid, antibodies, enzymes and hormones
- Natural, advisable way to support healthy growth and development
- In developed countries, exclusive breast feeding for at least 4 months, introduction of solids before 6 months in conjunction with breastfeeding (more on that later)

# Williams BF Study, n = 2

Unpublished data – totally biased!!

