

## **‘Optimising’ breastfeeding: what can we learn from evolutionary, comparative and anthropological aspects of lactation?**

### ABSTRACT

Background: Promoting breastfeeding is an important public health intervention, with benefits for infants and mothers. Even modest increases in prevalence and duration may yield considerable economic savings. However, despite many initiatives, compliance with recommendations is poor in most settings – particularly for exclusive breastfeeding. Mothers commonly consult health professionals for infant feeding and behavioural problems. Main body: We argue that broader consideration of lactation, incorporating evolutionary, comparative and anthropological aspects, could provide new insights into breastfeeding practices and problems, enhance research and ultimately help to develop novel approaches to improve initiation and maintenance. Our current focus on breastfeeding as a strategy to improve health outcomes must engage with the evolution of lactation as a flexible trait under selective pressure to maximise reproductive fitness. Poor understanding of the dynamic nature of breastfeeding may partly explain why some women are unwilling or unable to follow recommendations. Conclusions: We identify three key implications for health professionals, researchers and policymakers. Firstly, breastfeeding is an adaptive process during which, as in other mammals, variability allows adaptation to ecological circumstances and reflects mothers’ phenotypic variability. Since these factors vary within and between humans, the likelihood that a ‘one size fits all’ approach will be appropriate for all mother–infant dyads is counterintuitive; flexibility is expected. From an anthropological perspective, lactation is a period of tension between mother and offspring due to genetic ‘conflicts of interest’. This may underlie common breastfeeding ‘problems’ including perceived milk insufficiency and problematic infant crying. Understanding this – and adopting a more flexible, individualised approach – may allow a more creative approach to solving these problems. Incorporating evolutionary concepts may enhance research investigating mother–infant signalling during breastfeeding; where possible, studies should be experimental to allow identification of causal effects and mechanisms. Finally, the importance of learned behaviour, social and cultural aspects of primate (especially human) lactation may partly explain why, in cultures where breastfeeding has lost cultural primacy, promotion starting in pregnancy may be ineffective. In such settings, educating children and young adults may be important to raise awareness and provide learning opportunities that may be essential in our species, as in other primates.

**Keyword:** Breastfeeding; Lactation; Primate; Human; Anthropology; Evolution; Mother–infant conflict; Learning; Signalling