



**INFANT FORMULA MANUFACTURERS
ASSOCIATION OF AUSTRALIA, INC**

**Submission to the House of Representatives Standing
Committee on Health and Ageing**

Inquiry into Obesity in Australia

- i. Introduction
- ii. Industry Position Summary
- iii. Discussion
 - a) Links between Infant Feeding and Obesity
 - b) Developing Good Nutrition
 - c) Nutritional Composition of Infant Formula
 - d) Who Growth Charts
- iv. Recommendations
 - a) Support Better Decision Making through Better Information
 - b) Recognise the Value of Research
 - c) Seeing the "Big Picture"
- v. Conclusion

Introduction

The Infant Formula Manufacturers' Association of Australia (IFMAA) is a voluntary organisation that represents the significant majority of companies: Heinz, Nutricia, Nestlé, Bayer and Wyeth: manufacturing, importing and marketing their own brands of infant formulas in Australia.

The members work together with government and other key stakeholders to support the public health goals of promoting breastfeeding and good nutrition for infants.

Infant formula is a research-based industry – our products embody the outcomes of scientific research on the combinations of nutrients that foster growth and development of infants. Industry-sponsored research has contributed much of the current knowledge about the nutritional needs of infants as well as the qualities and benefits of breast milk.

While IFMAA is pleased that the rate of breastfeeding remains high in Australia, we are concerned that the rate of obesity in children has increased dramatically in recent years.

IFMAA welcomes the Committee's inquiry into the obesity and sees this as an opportunity to reaffirm the industry's commitment to the good nutrition for infants from birth.

Industry Position Summary

There is no question that breast milk provides the best nutrition for infants. However, despite the undisputed superiority of breast milk, some mothers are unable to or do not breastfeed their infants. And of those mothers who do choose to breastfeed, the majority of them stop before their infant is one year old.¹

Infant formula is a scientifically based and regulated food containing all the necessary ingredients needed to meet an infant's nutritional requirements and is the only suitable alternative to breast milk. It is therefore, a very important health and nutrition product for our infants.

While infant formula will never be able to provide the optimal nutritional benefits that are provided by breast milk, infant formula has come a long way since it was first introduced. Industry continues to research and develop its products to ensure that best-practice nutrition is reflected in the composition of infant formula within the food regulations.

The WHO Code for the *Marketing of Breastmilk Substitutes* recognizes that health professionals have an important role to play in advising mothers and families on the proper use of infant formula. When an infant is not breast-fed their parents and carers

¹ Australia Bureau of Statistics. National Health Survey, 2001.

should receive full support from their health advisors and access to factual information and advice to prevent overfeeding.

Evidence is weak and inconclusive that infant formula increases the risk of obesity when used correctly. If there is an effect, it appears to be small and frequently lost amidst very many more powerful lifestyle factors. Breast feeding mothers and mothers who use infant formula are very different with very different lifestyles and parenting habits. Where these lifestyle differences can be accounted for, no effect on obesity has been observed.

Overfeeding is only one aspect in the development of obesity in children. In its paper *A rising epidemic: obesity in Australian children and adolescents (October 2004)*, the Australian Institute of Health and Welfare identified a number of other causes of obesity in children including an increase in a sedentary lifestyle, a decrease in exercise and changes in family structure and dynamics.

Discussion

Links between infant feeding and obesity

IFMAA believes that breastfeeding is the optimum method of infant feeding from birth and should be encouraged wherever possible. However, some mothers are unable to breastfeed, due to a variety of reasons, which can include illness, use of medication or where children are adopted or fostered. Where a child cannot be breastfed, infant formula and follow-on formula are the only suitable alternatives until the age of 12 months.

IFMAA strongly believes that these mothers deserve to have access to high quality information to allow them to make informed choices² about the types of formula they feed their baby, and to ensure they understand safe and appropriate methods of preparing and feeding formula, including how to avoid over-feeding.

Breast-milk is a complex substance, and like other kinds of milk, has beneficial effects beyond simply providing energy, protein and other nutrients for growth. However, the full range of these beneficial effects and their causes are not fully understood.

The scientific literature showing an association between breastfeeding and chronic disease like obesity is inconclusive. Environmental and genetic factors play a significant

² The World Health Organization. *Global Strategy for Infant and Young Child Feeding*. 2003.

role in the development of these diseases. Much of the reported evidence for an association with breastfeeding is from non-randomized trials and the results are inconsistent with small effects.

A recent large scale longitudinal study found no relationship between breastfeeding and obesity in adulthood³. In contrast, some observational studies have found that breastfeeding seems to have a small but consistent protective effect against obesity in children.⁴ It is unclear whether the protective effect observed in these studies was due to breastfeeding itself or confounding factors associated with breastfeeding.^{5,6}

Confounding refers to the fact that the lifestyle factors associated with breastfeeding may be responsible for the apparent association between breastfeeding and an outcome, rather than breastfeeding itself. For example, a 2005 study in Australia found no difference in risk of overweight due to infant feeding method when maternal factors including maternal weight and education were controlled.⁷ Typically statistical methods are used to control for the potential confounders, but this approach depends on how the confounding variables are defined.

An alternative method of controlling for maternal and familial factors that has recently emerged in the literature is sibling-pair analysis. Sibling pair analysis compared the outcomes of siblings who differed with respect to the variable in question, but otherwise had the same environmental and genetic background (i.e. these are largely controlled, and residual differences may be randomized between groups).

There are two recent studies that used sibling pair analyses to study the relationship of obesity with respect to infant feeding type (breastfeeding or formula feeding). Nelson and colleagues⁸ reported no relationship between overweight and infant feeding type, and Evenhouse and Reilly⁹ reported a significant positive association between breastfeeding and later life "risk of overweight" and positive but not statistically

³ Michels KB, Willett WC, Graubard BI, et al. A longitudinal study of infant feeding and obesity throughout life course. *Int J Obes*. 2007.

⁴ Arenz S, Rucker R, Koletzko B and von Kries R. Breast-feeding and childhood obesity – a systematic review. *International Journal of Obesity*. 2004; 28:1247-1256

⁵ Owen C, Martin R, Whincup P, Smith G, Cook D. Effect of infant feeding on the Risk of Obesity Across the Life Course: A Quantitative Review of Published Evidence. *Pediatrics*. 2005; 115:1367-1377

⁶ Quigley MA. Duration of Breastfeeding and Risk of Overweight: A Meta-Analysis. *American Journal of Epidemiology*. 2006 163(9):870-872.

⁷ Burke V, Beilin LJ, Simmer K, et al. Breastfeeding and Overweight: Longitudinal Analysis in an Australian Birth Cohort. *The Journal of Pediatrics*. 2005;147(1):56-61.

⁸ Nelson MCG-L, Penny Adair, Linda S. . Are Adolescents Who Were Breast-fed Less Likely to Be Overweight?: Analyses of Sibling Pairs to Reduce Confounding. *Epidemiology*. 2005;16(2):247-253.

⁹ Evenhouse E, Reilly S. Improved Estimates of the Benefits of Breastfeeding Using Sibling Comparisons to Reduce Selection Bias. *Health Services Research*. 2005;40(6p1):1781-1802.

significant associations between breastfeeding and "overweight" (95th centile and above) and breastfeeding and BMI.

A recent study Kramer et al., 2007,¹⁰ has shown no statistically significant difference on the protective effect against obesity in later stages of life between breastfed vs. bottle-fed infants.¹¹

It should be noted that a randomized study is the best method to determine the effect of an intervention on outcome. In the case of infant feeding it is neither feasible nor ethical to randomly assign infants to be breast or formula fed. Instead, a large randomized prospective trial of breastfeeding promotion, called the PROBIT trial in Belarus, was conducted to address the potential biases associated with these observational studies. Results from this study show that despite substantial increases in breastfeeding, there were no differences in obesity in childhood¹², confirming the findings of these other approaches.

Developing Good Nutrition

Any discussion of infant nutrition must recognize the importance of providing suitable foods as the infant is introduced to solids and is eventually weaned. It is generally recommended that solid foods be introduced from around 6 months onwards as a baby's digestive system develops and they require more nutrients for growth.

Appropriately prepared and portioned fresh foods play an important role in this next stage of nutrition in a child's life. These foods contribute to dietary habits that may last a lifetime. As a child's diet develops to include solids the portion and type of food is important to ensure the child is able to not only achieve optimal nutrition intakes but also have an opportunity to regulate their own intakes to prevent over-feeding. Commercial products that are nutritionally balanced for children, in appropriate portion sizes, can also make an important positive contribution to a child's diet.

In considering the role for nutrition in obesity we urge the Committee to recognize the importance of appropriate food choices throughout infancy and childhood. This will ensure infants and young children receive the best possible nutrition for growth and

¹⁰ Kramer MS, Matush L, Vanilovich I, Platt RW, Bogdanovich N, Sevkovskaya Z, Dzikovich I, Shishko G, Collet JP, Martin RM, Smith GD, Gillman MW, Chalmers B, Hodnett E, Shapiro S. Effects of Prolonged and Exclusive Breastfeeding on Child Height, Weight, Adiposity, and Blood Pressure at Age 6.5 y: Evidence from a Large Randomized Trial. *Am J Clin Nutr* 2007. 86: 1717-21.

¹¹ Arenz S, Rucker R, Koletzko B and von Kries R. Breast-feeding and childhood obesity – a systematic review. *International Journal of Obesity*. 2004; 28:1247-1256

¹² Kramer MS, Matush L, Vanilovich I, et al. Effects of prolonged and exclusive breastfeeding on child height, weight, adiposity, and blood pressure at age 6.5 y: evidence from a large randomized trial. *Am J Clin Nutr*. 2007;86(6):1717-1721.

development, and it also recognises that establishing healthy nutrition habits early is essential for health in later life.

Nutritional Composition of Infant Formula

Infant formula manufacturers are committed to the best possible nutrition in those infants who are not breastfed. Under the guidance of expert nutritionists and paediatric advice, the composition of infant formulas has evolved as research has uncovered new ways to improve infant formula, often by ensuring that it more closely resembles the composition of breastmilk.

There have been some misinformed reports that "infant formulas are full of sugar" and hence contribute to obesity. This statement is incorrect. All of the standard cow's milk based infant formulas contain lactose, the same sugar found in breast milk, at concentrations as in breast milk.¹³

Lactose exists almost nowhere else in nature, and aids the absorption of calcium and other nutrients. Soymilk formulas do not contain lactose although the sugar level is the same.

Lactose is present in breastmilk at higher levels than in cow's milk, and is also considered a very important source of readily available calories for the baby. Lactose is therefore added to formula to ensure that it is more similar to the composition of breastmilk, because research indicates this is better for babies. This is fundamentally different to "adding sugar" to a product to sweeten it or to increase the energy content with "empty calories."

IFMAA will continue to work closely with health authorities and regulators to ensure that best practice in infant nutrition is reflected in the composition of formulas.

WHO Growth Charts

Being able to accurately chart an infant's growth against the standard is a very important tool for paediatricians and health workers to assess whether an infant is growing correctly or may be at risk of underweight or overweight. Moreover the implementation of health charts and the perceptions mothers gain from their use may have implications on child health. This provides an opportunity for further education for mothers and health workers.

The World Health Organization (WHO) published new infant growth charts on April 2006. These charts are based on a range of samples of exclusively breast-fed infants

¹³ Cavalli C., Teng C., Battaglia, FC., Bevilacqua G., "Free Sugar and Sugar Alcohol Concentrations in Human Breast Milk" J. Pediatr. Gastro. Nutri. 2006 42:215-221

from different countries. The previous infant growth charts were based on data from several samples of formula fed children from a single country. Both sets of growth charts suffer from a number of technical and biological drawbacks. However, there is now a difference between the two sets of internationally recognised growth charts in regards to average and recommended growth rates.

These differences cause us to reflect upon the current usage and implementation of infant growth charts, and highlights the need for education amongst health workers and parents to ensure that the purpose and limitations of growth charts are understood by both mother and health worker. Education will ensure that growth chart information is not incorrectly applied and so prevent inappropriate accelerated infant growth through over-feeding.

Recommendations

Support Better Decision Making Through Better Information

IFMAA believes that education plays an important role in empowering people to make informed choices about their health and wellbeing. IFMAA strongly believes mothers who are not breastfeeding should have ready access to the information they need to optimise their infant's nutrition, particularly around appropriate levels of feeding.

IFMAA calls on the Committee to ensure that any public health campaign promoting the benefits of breast-feeding is complemented with a targeted campaign, advising mothers who formula-feed how to ensure they are feeding their baby in a safe and appropriate manner. In addition a campaign educating mothers and health workers of feeding practices to prevent overfeeding of an infant should be a priority.

We believe it is vital that campaigns promoting breastfeeding should also advise that babies would be placed at risk if mothers, who are no longer breastfeeding, provide other milks rather than infant formula or follow-on formula to their infants before they are 12 months old.

Recognise the Value of Research

There have been many exciting developments in the field of infant nutrition, particularly with regard to the ongoing health benefits of the many bioactive substances found in milk.

In the 1960's, manufacturers' and researchers' main interest was in concentrating on what infants needed for survival. What we now know is that early nutrition does matter

in terms of long-term health effects. It is understood that early nutrition may have a permanent effect on growth and development of the infant. One opportunity is to alter the composition of infant formula and the other opportunity is to prevent over feeding during infancy through education.

Infant formula manufacturers have made changes to infant formulas based on new scientific evidence, for example extensive protein modifications have been made in order to improve the quality of the protein such that it more closely resembles breast-milk. Infant formulas, particularly in the past, provided higher amounts of protein than that found in breast-milk for a number of reasons, which included poor standards of measures for protein and amino acids when compared with standards recognised today. This resulted in an over-estimation of protein requirements for the infant. Over the past 90 years infant formulas have changed from being most similar to cow's milk, in regards to protein profile, to whey dominant formulas that have similar casein to whey ratios as mature human breast-milk. While international health authorities welcomed the introduction of whey dominant formulas, it was still recognized that the type and amount of whey and casein proteins found in cow's milk and human breast milk were not the same.

Since that time manufacturers have made advancements in the type and the amount of protein. This has allowed manufacturers to lower the amount of protein, which has benefits for the infant, such as reduced renal solute load. Emerging research suggests that further reducing the protein of infant formula down to levels comparable to that in breast milk can help reduce the risk of obesity in later stages of life.¹⁴ Preliminary findings of the large EU Childhood Obesity Programme suggest a 17% risk reduction can be obtained by using these reduced protein formula¹⁵. As the field of infant nutrition is research-based, findings such as these will see manufacturers continue to fine-tune their products to achieve nutrition as close as possible to the reference standard of breast milk.

IFMAA welcomes scientific progress and is committed to producing the best possible nutritional products for infants who are not breastfed. However, innovations such as these are also expected to benefit infants who are formula-fed over the longer term, including their growth, cognition and bone health. Two thousand papers in the last 5 years have been published that demonstrate advances in the understanding of human milk. Infant formula manufacturers are committed to this research and will continue to apply this knowledge gained to infant formulas, to ensure that formula-fed infants receive the best possible start in life.

¹⁴ Koletzko B. Long-Term Consequences of Early Feeding on Later Obesity Risk. Nestlé Nutr Workshop Ser Pediatr Program. 2006. 58: 1-18.

¹⁵ Koletzko B. Infant Feeding and Later Obesity, presented at DOHAD Congress, Perth, Nov 2007.

Recent research suggests that the highest priority in prevention of obesity later in life should be placed on the prevention of overfeeding during infancy. Overfeeding during infancy has been investigated in animals and humans and has shown to have an association with long-term negative health effects.¹⁶ Numerous studies have shown that rapid weight gain during infancy is a significant risk factor for obesity later in life.^{17,18,19} A recent study investigating maternal control and infant weight gain has shown that when feeding is controlled by the infant there is less accelerated weight gain i.e. term infants had a tendency to grow along their growth curves²⁰ when compared with mothers who placed a high level of control over what the infant was being fed.

In today's society where there is pressure to outperform in the areas of academia and sporting prowess, there is pressure felt by parents to ensure their child is growing faster than the norm. There is no doubt that during the first year of life mothers track closely their infant's growth, along with their health worker. A lack of education regarding the use of growth charts by health workers and mothers and a poor understanding of infant feeding practices can result in a mother over-feeding the infant.

Therefore, there is an opportunity to affect long-term health through education of mothers and health workers of the importance of not over-feeding, by allowing infants to grow along their growth curves and prevent unnecessary accelerated growth. The release of new WHO growth charts may change the way we assess standard growth in infants and may provide the vehicle to address overfeeding during infancy with health workers.

Seeing the "Big Picture"

Diet and nutrition play a crucial role in preventing obesity and related conditions, such as type two diabetes. IFMAA recognises the importance of the stage between birth and childhood as a vital period of growth and development. We value the importance of making sure every child is given the best possible foundation in life.

¹⁶ Singhal A. Early Nutrition and long-term cardiovascular health. *Nutrition Reviews*. 2004. 64;S44-9.

¹⁷ Ong KKL, Ahmed ML, Emmett PM, Preece MA, Dunger DB. Association between postnatal catch-up growth and obesity in childhood: prospective cohort study *BMJ*. 2000;320(7240):967-971.

¹⁸ Stettler N, Zemel BS, Kumanyika S, Stallings VA. Infant weight gain and childhood overweight status in a multicenter cohort study. *Pediatrics*. 2002;109:194-199

¹⁹ Ekelund U, Ong K, Linne Y, et al. Both infancy and childhood weight gain predict obesity risk at age 17 years: prospective birth cohort study (SWEDES). *Obes Res*. 2004;12:A186

²⁰ Farrow C, Blissett J. Does Maternal Control During Feeding Moderate Early Infant Weight gain? *Pediatrics*. 2006. 118;1898-1903.

Infant nutrition is certainly one significant part of an overall picture. Maternal nutrition while a baby is *in utero*, the subsequent introduction of solid foods, nutrition during childhood and nutrition in adulthood all affect the risk of various lifestyle diseases.

Obesity is a lifestyle disease. Successful strategies should focus on good nutrition as a lifelong goal and main outcome. However, the causes of lifestyle diseases are multifactorial. Strategies to increase spontaneous exercise, including a reduction in sedentary activities in childhood (e.g. television watching) would be essential in reducing incidence amongst children.

Conclusion

Addressing and preventing the incidence of obesity in Australia is a vital issue for our community. Strategies that target diet and nutrition will play an important role in achieving a goal of reducing the incidence of obesity.

IFMAA supports the following strategies in the area of infant nutrition to address this issue:

- Recognition of the importance of the education of families and health workers to allow parents to make appropriate and informed choices to optimise their infant's nutrition and to prevent over-feeding during the first 12 months of life.
- Recognition of ongoing scientific research, an evidence-based approach and industry cooperation to ensure that policies around infant formula support best practice.
- Recognition that infant nutrition is part of a bigger picture that sees good nutrition as a lifelong goal.

IFMAA will continue to work with the Australian government and its agencies to ensure that best-practice nutrition is reflected in the composition of infant formula and in highlighting the opportunities to encourage optimal feeding practices for infants.

If there are any queries in relation to this submission please contact:

Jan Carey

Executive Director

Infant Formula Manufacturers' Association of Australia

PO Box 7190

Yarralumla ACT 2600

Ph: 02 6282 4748 Fax: 02 6161 4782

jancarey@ifmaa.org