

An investigation into the preparation of powdered infant formula in households in Ireland

N. Lawlor¹, J.L. O'Neill², K. O'Connor², M. Redmond², A. O'Grady² and S. Wilkinson²
¹Technological University Dublin, Dublin, Ireland and ²Danone Nutricia Specialised Nutrition, Dublin, Ireland

Breastfeeding is the best and safest way of ensuring optimal growth and development in infants.⁽¹⁾ When breastfeeding is not possible, infant formula may be used. Powdered infant formula (PIF) is not sterile and may contain pathogens such as *Enterobacter sakazakii* that can cause illness⁽²⁾. Care must be taken throughout preparation, use and handling of PIF in the home to reduce risk of contamination. Guidance from the Food Safety Authority of Ireland⁽³⁾ and Safefood⁽⁴⁾ on how to safely prepare PIF should be followed. The present study, conducted in 2022, aimed to assess compliance with guidance on how to safely prepare PIF in the home. Secondly, data on compliance were compared with findings from a previously published survey conducted in 2019.⁽⁵⁾

A 15-item questionnaire (based on the original questionnaire released in 2019⁽⁵⁾) was distributed *via* 'everymum.ie' to parents of infants aged 0–12 months feeding PIF. Descriptive statistics were carried out using IBM SPSS 28. Pearson Chi-square tests were performed to assess relationships between categorical variables in the current and previous study (significance at $P < 0.05$).

Among the 521 participants analysed in 2022, most were female (99%), aged 25–44 years (93%) and educated to tertiary level (84%). Similarly, in 2019, of all parents ($n = 228$), most were female (89%), aged 25–44 years (99%) and educated to tertiary level. In 2022, the majority exclusively fed formula (71%, $n = 372$), while the remainder fed a combination of breast and formula milk. Information on how to prepare PIF was commonly sourced from infant formula packaging (55%, $n = 271$) and healthcare professionals (46%, $n = 229$). In 2022, findings revealed that 45% ($n = 219$) did not comply with recommendations to boil one litre of fresh tap water when preparing PIF, revealing a significant decrease ($p = 0.008$) in compliance since 2019 when 34% ($n = 69$) were non-compliant. Furthermore, 68% of participants in 2022 ($n = 328$) did not follow guidance to cool boiled water for 30 minutes before use in the preparation of PIF, showing a significant decrease ($p < 0.001$) in compliance with preparation guidelines since 2019, when 55% ($n = 111$) were found to be non-compliant. A small proportion in 2022 (6%, $n = 30$) and 2019 (3%, $n = 6$) did not sterilise their feeding equipment at all. Although not recommended⁽⁶⁾, automatic formula preparation machines were used by 39% ($n = 191$) and 32% ($n = 62$) of samples in 2022 and 2019, respectively. Of the 4% ($n = 20$) who had a boiling water tap installed in their home in 2022, 1% ($n = 7$) used water from their boiling water tap to prepare PIF.

Since 2019, the present study (2022) observed a persistent lack and decrease in compliance with preparation guidelines. An education campaign on the safe preparation of PIF appears necessary to enhance understanding of guidelines and their importance to reduce the risk of contamination, ultimately preventing illness.

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References

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