

# “Is That Breastmilk in the Fridge?”: Mothers’ Experiences of Expressing Breastmilk in the Workplace and a Thermometry Study of Communal Workplace Refrigerators.

Ellen W. Evans<sup>1\*</sup> & Sophia Komninou<sup>2</sup>

<sup>1</sup>ZERO2FIVE Food Industry Centre Food and Drink Research Unit, Cardiff Metropolitan University, Llandaff Campus, Cardiff, United Kingdom.

<sup>2</sup>School of Health and Social Care, Swansea University, Singleton Campus, Swansea, United Kingdom.

\*Corresponding author: elevans@cardiffmet.ac.uk

## Introduction

The benefits of breastfeeding are widely documented. To achieve optimal development and health, it is recommended that infants should be exclusively breastfed for the first six-months [1]. Breastmilk continues to provide up to half of an infant’s nutritional needs during the second year of life [1].

Many women choose to express breastmilk when returning to work to enable infants to continue receiving breastmilk. When providing an infant with expressed breastmilk, parents have additional hygienic responsibility for the pump and feeding vessels, as well as ensuring safe storage of the breastmilk [2]. Sustaining breastfeeding/expressing when returning to work requires time and commitment on behalf of the mother, as well as a supportive workplace or study environment [3].

Although there is no legal right, if mothers continue breastfeeding beyond maternity leave, the Health and Safety Executive (Britain’s national regulator for workplace health and safety) recommends that employers provide a private, healthy and safe environment for breastfeeding mothers to express and store milk [4].

A significant lack of data exists regarding the hygiene perceptions and practices of mothers when expressing and storing breastmilk in the workplace.

## Purpose

The objectives for this part of “Project Expressing” were to explore the experiences of mothers when expressing breastmilk in the workplace and to establish the operating temperatures of communal workplace refrigerators.



“Project Expressing” is a research collaboration between Cardiff Metropolitan and Swansea University exploring the hygiene perceptions and practices of parents when expressing, storing and providing expressed breastmilk for infants.

## Methods

To achieve the objectives of the study, the study consisted of two phases of data collection:

- In-depth interviews were undertaken with mothers who expressed breastmilk ( $n=40$ ) to explore experiences of expressing in the workplace.
- A thermometry study using time-temperature dataloggers was undertaken to determine temperature performance of communal workplace refrigerators ( $n=22$ ).

Ethical approval to undertake the research was obtained from the Healthcare and Food Ethics Committee at Cardiff Metropolitan University. ‘Project Expressing: Thermometry study of communal workplace fridges’: Sta-5698 and ‘Project Expressing: Interviews regarding parental experiences of expressing breastmilk for infants’: Sta-5678.

## References

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## Results

### Mothers’ reasons for expressing breastmilk

Many women referred to expressing as “the next best thing” to breastfeeding, particularly when personal circumstances prevented direct breastfeeding. Whereas others described choosing to express to enable others to feed:

“I was quite fortunate with the older children, because expressing really was a personal choice, just so I had that ability to do other things and have a bit of freedom.... But with my youngest, it wasn’t necessarily a choice, he’s got Down syndrome. So we had some feeding issues initially in terms of the size of him, the muscle tone in his mouth, so we had to do a lot of expressing in those early days to make sure he actually had enough food.” (Participant 007)

“I gave birth at 30 weeks of pregnancy... So because he was so little, and he couldn’t feed by himself, he had to have tube feeding.” (Participant 019)

“For me, it was really important that my wife had that opportunity to feed our daughter as well. So I was quite adamant that I was going to express some bottles.” (Participant 010)

“I originally really wanted to breastfeed. But I think I was very naive as to how difficult it would be... So for me, it was a really, really painful latch. No matter what I tried... And it got to the point where I just thought ‘I can’t recover from a C section, and breastfeed’. So the next thought was, ‘Okay, well, let’s see if I can express?’” (Participant 018)

### Experiences of expressing in the workplace

For those that had been able to breastfeed directly, “returning to work” was often a reason to start expressing. Some “expressed whilst at work” to “maintain milk supply” or “for comfort”. Others discussed how they “built up a stash in the freezer before returning to work” so they could stop breastfeeding but continue providing breastmilk. Of those that had expressed in their place of work or study, many challenges regarding suitable locations were discussed, along with a lack of support or receptiveness from the employer:

“The way that my job is aligned, it wouldn’t have been practical for me to carry on expressing. So I had phased down to two pumps by six months, to ensure that I could go back to work and not have my day disrupted by needing to express. It wasn’t something that I necessarily felt comfortable speaking to my work about doing. I was the first woman in senior management to have a baby. There was a lot less support from work.” (Participant 033)

“Expressing in uni was challenging. Although I had approached them beforehand, to make sure a room was available, I did find myself on the first few days having to express in the car, because they didn’t have a room ready. I was having to put my coat up on the windows so that people couldn’t see me... When they allocated me a room, it was in a different building, it wasn’t a locked room, which was not ideal. It wasn’t a feeding room as such, it was just a spare room with just a chair that I could use.” (Participant 020)

“So when I went back to work, expressing in the prison environment was definitely interesting. I was probably the first person to have ever asked. They accommodated it because they knew that they had to... Having to go and ask a 60 odd year old man, if I could bring a breast pump into prison, was just one of those really awkward conversations. I said to him ‘I need to talk to you about what I’m going to do about expressing when I go back to work’ and he goes, ‘well, that’s women’s work, you want to speak to...’ and I was like, ‘well, no, actually, it’s 2022, and you’re my boss, so I need to speak to you about this!’” (Participant 09)

“I work full-time as a primary school teacher, so kind of the only option was to do it at lunchtime and no other point during the day... I don’t think they were particularly keen on the idea. It was kind of like they would have to support it. Practically it wasn’t always brilliant, because there wasn’t really anywhere designated to go and do it.” (Participant 037)

### Workplace hygiene and refrigerator concerns

Access to appropriate facilities for sterilising equipment and storing breastmilk whilst at work were important. Some discussed colleague perceptions of breastmilk in communal fridges, concerns for fridge temperatures, and using cool bags when fridges weren’t available:

“I had a fridge in work that was a breastmilk-only fridge, that I was the only person to have a key for. So yeah, that was really supportive. I work in the NHS. So, I think it was standard in the NHS to provide the breastmilk fridge. You knew the milk wasn’t going to get interfered with in any way. And it was a clean fridge, the temperature was right for breastmilk, so you weren’t going to express and then it’s going to spoil. So yeah, there was loads of benefits to that.” (Participant 36)

“There’s the thing of storing it in the fridge and thinking what would I put it in to make sure that nobody touches it, and that nobody is grossed out by it, because people are idiots about breastmilk. And transporting it, the journey home from work, the logistics about keeping it at the right temperature on the way home. So there was all that to think about.” (Participant 027)

“I looked on the NHS website. And it’s like, ‘if your fridge is at this temperature, you can keep your breastmilk for this long’ when we don’t have a thermometer, and I don’t know the exact temperature of the fridge.” (Participant 005)

“My manager’s sorting out a room for me to express in... I’ll store it in my cool bag in the fridge, it’s just an extra layer of separation, and then the rest of the staff won’t know it’s breastmilk either. Because I know some people can be a bit funny about seeing breastmilk in the fridge.” (Participant 028)

“I would have liked somewhere to store the milk. But I would have been reluctant to leave it where other people could have access to it. I had a lunchbox with ice packs in. It was a little bit uncomfortable making sure it was kept cold.” (Participant 020)

“I didn’t have the facilities to sterilise my equipment, I found that I was wasting a lot of milk. Because I would express a second time in the day purely to keep my supplies up, but because the equipment wasn’t clean, I wasn’t keeping that milk.” (Participant 020)

“I did make sure, especially in the summer, I had some ice blocks in the cool bag so that it kept it nice and cold because you’re taking it out of a cold fridge and then putting it in your warm car and driving home with it. It’s not the best, so I did used to try and make sure the bag was nice and cold.” (Participant 09)

### Thermometry study of workplace refrigerators

The thermometry study collated the time-temperature profiles (every 1 minute) of domestic-type refrigerators ( $n=22$ ), located in communal workplace kitchens and offices ( $n=20$ ), at a UK-based organisation over a five day working week, during which over 450,000 data points were collated. As indicated in Table 1, the thermometry study established:

- Refrigerator operating temperatures ranged from  $-9.4^{\circ}\text{C}$  up to  $17.6^{\circ}\text{C}$  during the time-temperature profiling.
- Mean operating temperatures in central storage locations ranged between  $-5.1^{\circ}\text{C}$  and  $10.7^{\circ}\text{C}$ .
- Mean operating temperatures in door storage areas ranged between  $3.4^{\circ}\text{C}$  and  $12.2^{\circ}\text{C}$ .
- Mean temperatures  $>5.0^{\circ}\text{C}$  were recorded in 86% of door storage areas and 77% of central storage areas.
- No refrigerators had central and/or door storage areas at temperatures  $\leq 5.0^{\circ}\text{C}$  for the duration of the working week.
- Only three refrigerators (13%) had safe temperatures ( $\leq 5.0^{\circ}\text{C}$ ) in central and door storage areas for  $\geq 50\%$  of the working week.
- 96% of refrigerators did not have thermometers to determine operating temperature.

Table 1. Mean operating temperatures of communal workplace refrigerators ( $n=22$ ).

Refrigerator ID	Refrigerator door storage area		Refrigerator central storage area	
	Mean temperature	Time $>5.0^{\circ}\text{C}$	Mean temperature	Time $>5.0^{\circ}\text{C}$
1	$8.0^{\circ}\text{C} \pm 0.7$	100%	$7.0^{\circ}\text{C} \pm 0.6$	100%
2	$12.2^{\circ}\text{C} \pm 0.6$	100%	$10.7^{\circ}\text{C} \pm 0.7$	100%
3	$3.4^{\circ}\text{C} \pm 2.9^{\text{a}}$	36% <sup>a</sup>	$2.6^{\circ}\text{C} \pm 3.0^{\text{a}}$	29% <sup>a</sup>
4	$8.1^{\circ}\text{C} \pm 0.7$	100%	$6.8^{\circ}\text{C} \pm 0.6$	100%
5	$8.6^{\circ}\text{C} \pm 0.6$	100%	$6.7^{\circ}\text{C} \pm 0.7$	100%
6	$5.9^{\circ}\text{C} \pm 0.4$	100%	$5.2^{\circ}\text{C} \pm 0.4$	84%
7	$6.9^{\circ}\text{C} \pm 0.3$	100%	$8.2^{\circ}\text{C} \pm 0.4$	100%
8	$3.9^{\circ}\text{C} \pm 3.4^{\text{a}}$	34% <sup>a</sup>	$-5.1^{\circ}\text{C} \pm 4.2^{\text{a}}$	5% <sup>a</sup>
9	$7.9^{\circ}\text{C} \pm 0.5$	100%	$5.3^{\circ}\text{C} \pm 0.6$	70%
10	$5.8^{\circ}\text{C} \pm 1.2$	87%	$5.1^{\circ}\text{C} \pm 1.7^{\text{a}}$	44% <sup>a</sup>
11	$5.0^{\circ}\text{C} \pm 0.6$	57%	$5.4^{\circ}\text{C} \pm 0.6$	79%
12	$9.2^{\circ}\text{C} \pm 0.8$	100%	$8.4^{\circ}\text{C} \pm 1.1$	100%
13	$8.4^{\circ}\text{C} \pm 0.8$	100%	$6.2^{\circ}\text{C} \pm 1.0$	90%
14	$9.8^{\circ}\text{C} \pm 0.4$	100%	$3.5^{\circ}\text{C} \pm 0.9^{\text{a}}$	2% <sup>a</sup>
15	$9.5^{\circ}\text{C} \pm 0.4$	100%	$4.5^{\circ}\text{C} \pm 0.5^{\text{a}}$	27% <sup>a</sup>
16	$10.3^{\circ}\text{C} \pm 0.3$	100%	$7.7^{\circ}\text{C} \pm 0.2$	100%
17	$10.3^{\circ}\text{C} \pm 0.5$	100%	$6.9^{\circ}\text{C} \pm 0.7$	100%
18	$5.7^{\circ}\text{C} \pm 0.5$	100%	$7.7^{\circ}\text{C} \pm 0.7$	100%
19	$3.9^{\circ}\text{C} \pm 1.8^{\text{a}}$	32% <sup>a</sup>	$-0.4^{\circ}\text{C} \pm 2.5^{\text{a}}$	2% <sup>a</sup>
20	$11.1^{\circ}\text{C} \pm 0.3$	100%	$8.5^{\circ}\text{C} \pm 0.4$	100%
21	$7.5^{\circ}\text{C} \pm 0.8$	100%	$6.2^{\circ}\text{C} \pm 0.9$	97%
22	$9.8^{\circ}\text{C} \pm 0.6$	100%	$6.1^{\circ}\text{C} \pm 0.9$	95%

<sup>a</sup>denotes mean temperatures and  $\geq 50\%$  profiling time at recommended operating temperature ( $\leq 5.0^{\circ}\text{C}$ )

## Significance of study

- Mothers indicated challenges of expressing in the workplace related to suitable facilities for expressing, sterilising and storing breastmilk.
- The majority of communal workplace refrigerators were operating at unsafe temperatures ( $>5.0^{\circ}\text{C}$ ) for the duration of time-temperature profiling.
- This study has established that workplace support should enable women to transition back into the workplace after maternity leave and express breastmilk in a suitable and hygienic environment to ensure the safety of expressed breastmilk for their infants.