

## Supplementary Materials

### Definitions

**Infant feeding:** For each type of feeding, parents were asked to indicate the frequency of feed. Exclusive breastfeeding was defined as an affirmative response to the question “Is your baby still breastfeeding?” AND an indicated frequency of direct breastfeeding, expressed breast milk or donor breast milk of >0 time per day AND frequency of formula use, cow’s milk, other milk and solid intake indicated as 0 time per day. Information on the mode of breast milk feeding (i.e. fed at the breast, fed expressed breast milk (EBM), or a combination of being fed at the breast and being fed EBM) was also collected among infants who were breastfed at each time point.

**Pet ownership:** Defined as any cat or dog ownership anytime during preconception to the first 3 months of life.

**Eczema:** Diagnosed at age 6 months by a trained paediatric allergist using the Hanifin and Rajka criteria<sup>13</sup> and severity assessed using the Scoring Atopic Dermatitis (SCORAD) grading.

**Gastrointestinal (GI) symptoms:** Mothers were given several options such as “too heaty”, “too much wind”, “choice of milk formula” and “immaturity of child’s gastrointestinal system”, which are known factors commonly cited by parents in the Singapore context. A free-text option was also provided, and text responses deemed to fit into any of the prior categories were also recoded into the respective categories. Other reported causes in the free-text format were also recoded collectively if sufficient numbers of similar responses were reported. Mothers were also asked about any lifestyle modifications made in response to their child’s symptoms. For those who reported troublesome GI symptoms, mothers were then asked to rank the importance of each of the infant’s GI symptoms in influencing their decision to implement interventions to address those symptoms. Mothers were also asked if their infants cried more than 3 hours in a day (labelled “excessive crying”), which suggested the presence of discomfort.

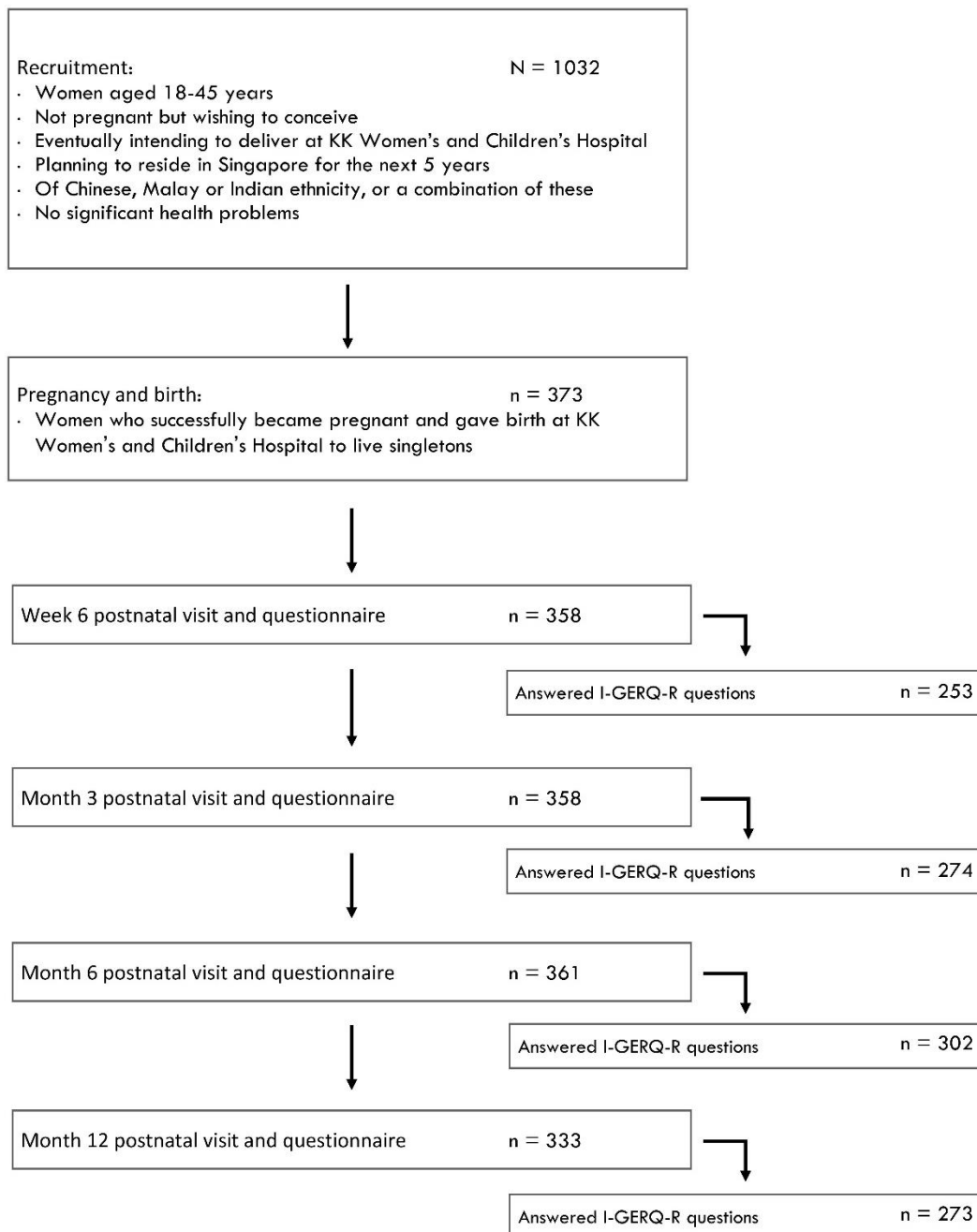


Fig. S1. Overview of study population. The flowchart shows number of participants recruited into the Singapore PREconception Study of long-Term maternal and child (S-PRESTO) and at 4 time points during the study, where the revised Infant Gastroesophageal Reflux Questionnaire (I-GERQ-R) was administered. The main eligibility criteria are also identified within the relevant time point.

Table S1. Demographic profile of mothers and infants who participated in this study (n=347)

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<b>Demographic profile</b>	<b>No. (%)</b>
Maternal age at recruitment, years, mean (SD)	29.91 (3.24)
Maternal ethnicity	
Chinese	264 (76.1)
Malay	48 (13.8)
Indian	20 (5.8)
Mixed ethnicity	15 (4.3)
Maternal highest education	
Pre-university	95 (27.4)
University	252 (72.6)
Monthly household income (SGD)	
\$4676 and below	28 (9.8)
\$4677–\$6144	37 (12.9)
\$6145–\$7423	35 (12.2)
\$7424–\$9082	70 (24.4)
\$9083–\$10 693	38 (13.2)
\$10694–\$13188	43 (15.0)
\$13189 and over	36 (12.5)
Maternal smoking status at preconception	
Never smoked	317 (91.6)
Ex-smoker	18 (5.2)
Smoker	11 (3.2)
Exposed to passive smoke	60 (17.9)
Multiparity	131 (44.1)
Infant's sex	
Female	152 (43.8)
Male	184 (53.0)
Infant's birthweight, g mean (SD)	3104.62 (429.65)
Mode of delivery	
Caesarean section	86 (24.8)
Vaginal delivery	236 (68.0)
Pre-term	
>37 weeks	328 (94.5)
<37 weeks	19 (5.5)
Gestational age at birth, weeks, mean (SD)	38.85 (1.33)
Exclusive breastfeeding at week 3	144 (44.9)
Breastmilk feeding (direct) at week 3	55 (17.2)

Demographic profile	No. (%)
Breastmilk feeding (expressed) at week 3	48 (15.1)
Breastmilk feeding (direct + expressed) at week 3	210 (65.8)
Formula feeding (frequency per day) at week 3, mean (SD)	2.1 (2.81)

SD: standard deviation

Table S2. Univariate analysis of the associations between demographic and environmental risk factors and GERD

-Where's Chinese in Ethnicity?

- Remove spacing for range – and use medium dash, not hyphen for all tables

	Odds ratio (95% CI)	P value
Ethnicity		
Chinese	1.0	–
Malay	0.32 (0.11–0.79)	<b>0.02</b>
Indian	0.35 (0.05–1.58)	0.21
Mixed ethnicity	0.45 (0.09–1.69)	0.26
Household income	1.10 (0.95–1.28)	0.21
Maternal highest education (university)	0.99 (0.51–1.95)	0.99
Maternal pre-pregnancy BMI	1.0 (0.93–1.07)	0.92
Multiparity	0.86 (0.46–1.60)	0.63
Eczema	0.74 (0.39–1.41)	0.37
Birthweight, kg	0.80 (0.38–1.66)	0.56
Gestational age at birth, weeks	1.21 (0.92–1.59)	0.18
Preterm (< 37 weeks)	0.42 (0.08–2.14)	0.30
Smoking at preconception	0.51 (0.07–2.44)	0.43
Smoking since preconception visit	0.55 (0.08–2.61)	0.48
Cat or dog ownership	1.48 (0.66–3.29)	0.39
Exclusive breastfeeding at week 3	0.8 (0.45–1.41)	0.44
Breastmilk feeding (direct) at week 3	0.69 (0.31–1.54)	0.37
Breastmilk feeding (expressed) at week 3	0.91 (0.40–2.08)	0.82

	<b>Odds ratio (95% CI)</b>	<b><i>P</i> value</b>
Breastmilk feeding (direct + expressed) at week 3	1.18 (0.63–2.21)	0.60
Formula feeding (frequency per day) at week 3, mean (SD)	1.12 (1.00–1.25)	<b>0.05</b>

CI: confidence interval; SD: standard deviation

Table S3. Multivariate logistic regression model for the association of ethnicity and infant feeding habits during first 3 weeks of life with GERD in the first year of life<sup>a</sup> (n=126)

	<b>aOR (95% CI)</b>	<b>P value</b>
Ethnicity		
Chinese	1.0	-
Malay	0.16 (0.03–0.76)	<b>0.02</b>
Indian	0.23 (0.02–2.52)	0.23
Mixed ethnicity	0.16 (0.03–1.01)	<b>0.05</b>
Formula feeding (frequency) at week 3	1.25 (1–1.56)	0.06
Exclusive breastfeeding at week 3	0.89 (0.31–2.61)	0.84
Breastmilk feeding (direct + expressed) at week 3	1.43 (0.59–3.49)	0.43

aOR: adjusted odds ratio; BM: breastmilk; CI: confidence interval

<sup>a</sup> All models adjusted for household income, maternal highest education level, multiparity, birthweight and gestational age.