Supplementary Material

**Consumption of differently processed milk products in infancy and early childhood and the risk of islet autoimmunity**

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Invited for follow-up

(n=7782)

Declined

(n=1701)

Enrolled for follow-up (n=6081)

Missing food record data (n=536)

Present study population

(n=5545)

Only available food record data are from the first year of life but growth data from this period to calculate the energy intake is missing

(n=39)

Missing growth data during first year of life

(n=145)

Population for energy-adjusted analyses

(n=5506)

Population for

breast milk analyses

(n=5400)

**Supplementary Figure 1.** Participant flow chart

Supplementary Material

**Supplementary Methods**

For the breast milk, the formula of the joint model for child *i* were of the form:

$$\left\{\begin{array}{c}y\_{i}\left(t\right)=m\_{i}\left(t\right)+ϵ\_{i}\left(t\right)=β\_{0}+b\_{0i}+δx\_{i}+\sum\_{k=1}^{5}ϑ\_{k}\left(B\_{k}\left(t\right)\*x\_{i}\right)+\sum\_{k=1}^{5}\left(β\_{k}+b\_{ki}\right)B\_{k}\left(t\right)+ϵ\_{i}\left(t\right)\\h\_{i}\left(M\_{i}\left(t\right),w\_{i}\right)=e^{γ^{T}w\_{i}+αm\_{i}\left(t\right)}h\_{0}\left(t\right), \end{array}\right.$$

where $β$ denote the fixed partand $b$denote subject specific random part of the intercepts and other regression parameters, respectively. In addition, $x\_{i}$ represent a breast milk consumption class with a fixed regression parameter $δ$, and $ϑ\_{k}$ is a vector of fixed regression parameters for the interaction between the breast milk class and the B-spline basis functions. *Bk*(*t*) is the value of *k*th B-spline basis function for a spline at age *t* and $ϵ\_{i}\left(t\right)\~N(0,σ^{2})$ are errors. *Mi*(*t*) = {*mi*(*s*)*,*0 ≤ *s < t*} denotes the history of the breast milk consumption profile until *t,* *wi* is a vector of baseline covariates with a vector of regression parameters *γ* and $h\_{0}\left(t\right)$ is the baseline hazard.

Supplementary Material

**Supplementary Table 1.** Risk of islet autoimmunity (n of cases=102, total n=3516) between the ages of 6 and 15 years associated with cumulative amount of breast milk and cumulative consumption of different types of milk products consumed until the age of 6 years based on the Cox regression model.

|  |  |
| --- | --- |
|  | Unadjusted model\* |
|   | HR | 95% CI | *P* |
| Amount of breast milk§ | 0.41 | 0.15, 1.14 | 0.087 |
| Conventional classification: |  |  |  |
| Cow's milk products: | 1.01 | 0.99, 1.02 | 0.562 |
| Non-fermented milk products  | 1.00 | 0.99, 1.02 | 0.694 |
| Milk-based infant formulas|| | 0.99 | 0.92, 1.06 | 0.784 |
| Fermented milk products¶ | 1.04 | 0.97, 1.13 | 0.271 |
| Cheeses | 1.04 | 0.65, 1.69 | 0.887 |
| Processing-based classification: |  |  |  |
| Homogenisation: |  |  |  |
| Homogenised milk products  | 0.98 | 0.91, 1.04 | 0.450 |
| Non-homogenised milk products | 1.02 | 0.99, 1.04 | 0.157 |
| Fat-free milk products | 1.00 | 0.97, 1.02 | 0.769 |
| Heat treatment: |  |  |  |
| Low-pasteurised or less heat-treated milk products  | 1.01 | 0.99, 1.03 | 0.311 |
| High-pasteurised or sterilised milk products | 0.99 | 0.93, 1.05 | 0.719 |

HR, hazard ratio; CI, confidence intervals

\*Hazard ratios and confidence intervals are presented per consumption of 100 grams of food item.

§For breast milk analysis, n of cases=102, total n=3428.

||Does not include extensively hydrolysed formulas.

¶Does not include cheeses. Cheeses are presented separately.