**Supplementary Information**

**Persistent organic pollutants in infants and toddlers: Relationship between concentrations**

**in matched plasma and faecal samples**

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Table S1 Inclusion/exclusion criteria for “OMPAC” study and for this study.

|  |  |  |
| --- | --- | --- |
| Inclusion criteria of this study | Inclusion criteria of “OMPAC” study | Participants who meet all of the following criteria are eligible for enrolment:   1. Children of either sex, aged 3-9 months old whose biological mother, father, or sibling has a history of asthma and/or atopy (defined as SPT reactivity to one or more allergen, food allergy, atopic dermatitis or allergic rhinitis). 2. Participants who, in the opinion of the investigator, are able to comply with the protocol for its duration 3. Written informed consent signed and dated by parent/legal guardian according to local regulations |
|  | 1. Written informed consent signed and dated by parent/legal guardian according to local regulations for plasma and faecal sample analysis for persistent organic pollutants |
| Exclusion criteria of this study | Exclusion criteria of “OMPAC’ study | Participants who meet any of these criteria are not eligible for enrolment:   1. Children born after less than 36 weeks gestation 2. Children who have been diagnosed with asthma 3. Children who have chronic pulmonary disease or other chronic disease (other than atopic dermatitis, food allergy, or chronic rhinitis) requiring therapy 4. Participation in another randomized controlled trial within the 3 months preceding inclusion in this study 5. Children who have previously received OM-85 or other immunostimulants or immunosuppressive drugs including cyclosporine |
|  | 1. Children who have failed to provide either plasma or faecal samples\* |

\*: Participants that failed to provide plasma sample of more than 0.3 ml or faecal sample of more than 1 g dry weight were excluded for that particular sampling time.

Table S2 Brief description of the analytic methods for plasma and faecal samples

|  |  |
| --- | --- |
| Plasma samples  (Jones et al. 2012; Sjodin et al. 2004) | The method includes automatic fortification of the samples with internal standard using a Gilson 215 liquid handler (Gilson Inc.; Middleton, WI). The samples were thereafter extracted by automated liquid-liquid extraction (LLE) using the liquid handler. Removal of co-extracted lipids was performed on a silica: silica/sulfuric acid column using Rapid Trace equipment (Biotage; Uppsala, Sweden) for automation. Final analytical determination of the target analytes was performed by gas chromatography isotope dilution highresolution mass spectrometry (GC-IDHRMS) employing a DFS instrument (Thermo DFS, Bremen, Germany). The plasma lipid concentrations were determined using a commercially available test kit from Roche Diagnostics Corp. (Indianapolis, IN) for the quantitative determination of total triglycerides and total cholesterol. Final determinations were made on a Hitachi 912 Chemistry Analyzer (Hitachi; Tokyo, Japan). All plasma POP concentrations are reported adjusted for lipid weight (lw). |
| Faeces samples  (Chen et al., 2015) | A 100 ml DioniumTM PLE cell was filled from the bottom upwards with 20 g of activated florisil, 20 g of sulfuric acid (40%) impregnated silica, 10 g of activated silica and approximately 1 g of homogenized faeces sample pre-mixed with 2 g of activated silica. Extraction was carried out on an ASE 350 (Dionex, Sunnyvale, CA, USA) using a solvent mixture of hexane:DCM (1:1, v/v ratio) at 100 °C, under a pressure of 1500 psi. The heating time, static time, and purge time were 5 min, 7 min and 120 s, respectively.  A flush volume of 60% was used. Two static cycles were used to achieve acceptable recovery (>50%) of target compounds. The extract was concentrated to 25 µl under a gentle N2 stream and transferred to an autosampler vial. Twenty-fiveµl (200 pg) of 13C12 -PCB141 in iso-octane was added as the recovery standard immediately prior to HRGC/HRMS analysis. The lipid content of the faeces sample was determined in a separate extraction using the same extraction method, except that no sorbents were included in the ASE cell. The resulting extract was then evaporated to dryness and the lipid content was determined gravimetrically. |

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Table S3 Quality control procedures and determination of limits of detection and quantitation.

|  |  |
| --- | --- |
| Plasma samples | In every batch of 24 plasma samples, 3 method blank and 3 spiked sample quality control samples were included. The analyte quantity in the sample was blank-corrected using the median analyte quantity in the blanks. The method limit of quantification (mLOQ) for plasma samples was defined as three times the standard deviation of blank samples or the instrumental quantification limit (lowest standard confirmed to have a signal to noise ratio greater than three), whichever was larger. The instrumental limit of quantificationwas 0.5 pg/uL for each of the PBDEs, 0.5 pg/uL for the PCBs, and 5 pg/uL for the OCPs. The limit of quantification(LOQ) for each plasma sample was then calculated by dividing the mLOQby the sample amount. |
| Faeces samples | All concentrations reported were blank-corrected using the median analyte amount in the blank samples. The method limit of detection (mLOD) was defined as three times the standard deviation (SD) of blank samples, while the method limit of quantification (mLOQ) was defined as 10 times the SD of blank samples. All chromatographic peaks were confirmed to have a signal-to-noise ratio greater than 3. The LOD and LOQ for each faecal sample were then calculated by dividing the mLOD and mLOQ with the sample amount. |

Table S4 Quality assurance for plasma and faecal sample analysis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Plasma | Internal standard  (IS) | LOQ1(ng/g lipid) (n=33)) | | Sample Recovery (n=33) |
| mean ± SD2 | | Mean ± SD |
| *p,p’*-DDE | 13C- *p,p’*-DDE | 8.2 ± 6.9 | | 81 ± 14 |
| HCB | 13C-HCB | 8.2 ± 6.9 | | 74 ± 20 |
| b-HCH | 13C-b-HCH | 8.2 ± 6.9 | | 73 ± 20 |
| y-HCH | 13C-y-HCH | 8.2 ± 6.9 | | 72 ± 21 |
| PCB28 | 13C-PCB28 | 1.6 ± 1.4 | | 79 ± 16 |
| PCB118 | 13C-PCB118 | 1.6 ± 1.4 | | 81 ± 14 |
| PCB138 | 13C-PCB138 | 1.6 ± 1.4 | | 84 ± 12 |
| PCB153 | 13C-PCB153 | 1.6 ± 1.4 | | 81 ± 14 |
| PCB180 | 13C-PCB180 | 1.6 ± 1.4 | | 84 ± 12 |
| PBDE47 | 13C-PBDE47 | 4.0 ± 1.8 | | 86 ± 11 |
| PBDE99 | 13C-PBDE99 | 1.6 ± 1.4 | | 88 ± 9.1 |
| PBDE100 | 13C-PBDE100 | 1.6 ± 1.4 | | 87 ± 10 |
| PBDE153 | 13C-PBDE153 | 2.2 ± 1.8 | | 93 ± 8.7 |
| PBDE154 | 13C-PBDE154 | 1.6 ± 1.4 | | 86 ± 10 |
|  |  |  | |  |  |
| Faeces | Internal standard  (IS) | LOQ3(ng/g lipid) (n=33) | LOQ3(ng/g dry weight) (n=33) | Recovery of internal standards (%) (n=33) | Replicate analyses of a pooled faecal sample (dry-weight based)  (n=4) | |
| mean ± SD | | Mean ± SD | Mean (CV4 [%]) | |
| *p,p’*-DDE | 13C- *p,p’*-DDE | 0.36 ± 0.20 | 0.036 ± 0.0014 | 81 ± 12 | 1.0 (7.2) | |
| HCB | 13C-HCB | 0.34 ± 0.23 | 0.035 ± 0.018 | 75 ± 14 | 0.11 (9.1) | |
| b-HCH | 13C-b-HCH | 0.11 ± 0.077 | 0.011 ± 0.0061 | 67 ± 20 | 0.25 (16) | |
| y-HCH | 13C-y-HCH | 0.29 ± 0.17 | 0.028 ± 0.019 | 61 ± 12 | 0.021 (11) | |
| PCB28 | 13C-PCB28 | 0.68 ± 0.39 | 0.070 ± 0.028 | 71 ± 19 | 0.03 (4.6) | |
| PCB118 | 13C-PCB118 | 0.18 ± 0.18 | 0.019 ± 0.016 | 79 ± 16 | 0.024(9.3) | |
| PCB138 | 13C-PCB138 | 0.22 ± 0.20 | 0.022 ± 0.017 | 78 ± 18 | 0.037 (13) | |
| PCB153 | 13C-PCB153 | 0.37 ± 0.25 | 0.038 ± 0.020 | 82 ± 17 | 0.056 (16) | |
| PCB180 | 13C-PCB180 | 0.41 ± 0.24 | 0.042 ± 0.017 | 76 ± 12 | 0.029 (8.5) | |
| PBDE47 | 13C-PBDE47 | 0.47 ± 0.31 | 0.046 ± 0.024 | 71 ± 14 | 0.12 (8.4) | |
| PBDE99 | 13C-PBDE99 | 0.16 ± 0.15 | 0.016 ± 0.012 | 72 ± 19 | 0.032 (25) | |
| PBDE100 | 13C-PBDE100 | 0.52 ± 0.37 | 0.052 ± 0.029 | 66 ± 19 | --5 | |
| PBDE153 | 13C-PBDE153 | 0.24 ± 0.15 | 0.023 ± 0.011 | 67 ± 19 | 0.016 (28) | |
| PBDE154 | 13C-PBDE154 | 0.09 ± 0.053 | 0.0088 ± 0.0036 | 69 ± 18 | --5 | |

1: LOQ: limit of quantification used for plasma samples. It was calculated by dividing the method limit of detection (mLOQ) with the sample amount for each individual sample. mLOQ was defined as three times the standard deviation of blank samples or the instrumental detection limit (lowest standard confirmed to have a signal to nose ratio greater than three), whichever was larger.

2: SD: standard deviation

3: LOQ: limit of quantification used for faecal samples. It was calculated by dividing the method limit of quantification (mLOQ) with the sample amount for each individual sample. mLOQ was defined as the sum of the mean blank and 10 times the standard deviation of blank samples.

4. CV: coefficient of variation

5. --: not calculated due to data < LOQ.

Table S5 Comparison between dry-weight based and lipid-weight based concentrations of PCB 153, *p,p’*-DDE, HCB and BDE47 in replicate faeces samples. The selection of samples for replicate analysis was based on the amount of faeces collected. The code in the column “No.” indicates the participant number (first number) and the sampling occasion number (second number).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***pp*'-DDE** | **Dry-weight based**  **(ng/g dw)** | | | **Lipid-weight based**  **(ng/g lipid)** | | | **HCB** | **Dry-weight based**  **(ng/g dw)** | | | **Lipid-weight based**  **(ng/g lipid)** | | |
| No. | Value 1 | Value 2 | % difference | Value 1 | Value 2 | % difference |  | Value 1 | Value 2 | % difference | Value 1 | Value 2 | % difference |
| 2-2 | -- | *--* | -- | -- | -- | -- |  | -- | *--* | -- | -- | -- | -- |
| 3-2 | 0.88 | 0.99 | 12 | 4.4 | 6.0 | 30 |  | 0.077 | 0.15 | 64 | 0.47 | 0.76 | 47 |
| 5-1 | 0.23 | 0.15 | 43 | 1.3 | 0.65 | 64 |  | 0.034 | 0.037 | 8 | 0.20 | 0.17 | 15 |
| 8-1 | 12 | 16 | 28 | 55 | 80 | 38 |  | 0.064 | 0.045 | 35 | 0.29 | 0.22 | 25 |
| 8-2 | 8.3 | 6.0 | 32 | 40 | 31 | 24 |  | 0.005 | 0.003 | 50 | 0.02 | 0.02 | 45 |
| 10-2 | 0.56 | 0.63 | 11 | 5.1 | 5.7 | 11 |  | 0.074 | 0.086 | 14 | 0.68 | 0.78 | 13 |
| 15-2 | 0.37 | 0.20 | 61 | 5.2 | 1.8 | 100 |  | 0.033 | 0.014 | 78 | 0.47 | 0.13 | 110 |
| 16-2 | 0.67 | 1.1 | 48 | 7.3 | 11 | 42 |  | 0.17 | 0.19 | 16 | 1.8 | 2.0 | 8.2 |
| 20-1 | 1.3 | 3.0 | 80 | 11 | 41 | 120 |  | 0.09 | 0.10 | 12 | 1.2 | 0.86 | 33 |
| 22-1 | 0.97 | 0.46 | 72 | 8.1 | 5.6 | 36 |  | 0.11 | 0.13 | 15 | 0.93 | 1.6 | 53 |
| mean | -- | -- | 43 | -- | -- | 52 |  | -- | -- | 32 | -- | -- | 39 |
| **PCB 118** | **Dry-weight based**  **(ng/g dw)** | | | **Lipid-weight based**  **(ng/g lipid)** | | | **PCB 138** | **Dry-weight based**  **(ng/g dw)** | | | **Lipid-weight based**  **(ng/g lipid)** | | |
| No. | Value 1 | Value 2 | % difference | Value 1 | Value 2 | % difference |  | Value 1 | Value 2 | % difference | Value 1 | Value 2 | % difference |
| 2-2 | 0.055 | 0.092 | 50 | 0.28 | 0.65 | 80 |  | 0.090 | 0.062 | 37 | 0.64 | 0.31 | 68 |
| 3-2 | 0.13 | 0.14 | 0.7 | 0.81 | 0.67 | 19 |  | 0.21 | 0.25 | 19 | 1.3 | 1.3 | 0 |
| 5-1 | 0.004 | 0.002 | 67 | 0.023 | 0.01 | 86 |  | 0.005 | 0.004 | 22 | 0.029 | 0.018 | 45 |
| 8-1 | 0.33 | 0.16 | 68 | 1.5 | 0.80 | 60 |  | 0.19 | 0.30 | 42 | 0.88 | 1.5 | 51 |
| 8-2 | 0.21 | 0.12 | 52 | 0.99 | 0.63 | 45 |  | 0.44 | 0.23 | 61 | 2.1 | 1.2 | 54 |
| 10-2 | 0.011 | 0.017 | 43 | 0.10 | 0.16 | 45 |  | 0.023 | 0.008 | 97 | 0.21 | 0.076 | 94 |
| 15-2 | 0.035 | 0.036 | 2.8 | 0.50 | 0.32 | 45 |  | 0.038 | 0.052 | 31 | 0.55 | 0.46 | 17 |
| 16-2 | 0.15 | 0.078 | 65 | 1.5 | 0.85 | 59 |  | 0.10 | 0.10 | 3.9 | 1.1 | 1.1 | 2.9 |
| 20-1 | 0.063 | 0.035 | 57 | 0.53 | 0.47 | 11 |  | 0.066 | 0.058 | 13 | 0.56 | 0.79 | 35 |
| 22-1 | 0.037 | 0.017 | 74 | 0.31 | 0.21 | 39 |  | 0.053 | 0.025 | 72 | 0.44 | 0.32 | 33 |
| mean |  |  | 48 |  |  | 49 |  |  |  | 40 |  |  | 40 |
| **PCB**  **153** | **Dry-weight based**  **(ng/g dw)** | | | **Lipid-weight based**  **(ng/g lipid)** | | | **BDE47** | **Dry-weight based**  **(ng/g dw)** | | | **Lipid-weight based**  **(ng/g lipid)** | | |
| No. | Value 1 | Value 2 | % difference | Value 1 | Value 2 | % difference |  | Value 1 | Value 2 | % difference | Value 1 | Value 2 | % difference |
| 2-2 | 0.10 | 0.064 | 46 | 0.72 | 0.32 | 77 |  | 0.90 | 0.20 | 130 | 6.4 | 1.0 | 150 |
| 3-2 | 0.19 | 0.21 | 11 | 1.1 | 1.0 | 8.3 |  | 0.51 | 0.75 | 38 | 3.1 | 3.8 | 19 |
| 5-1 | 0.006 | 0.004 | 51 | 0.037 | 0.017 | 72 |  | 0.044 | 0.02 | 76 | 0.28 | 0.11 | 90 |
| 8-1 | 0.39 | 0.33 | 17 | 1.8 | 1.6 | 7.0 |  | 0.26 | 0.40 | 44 | 1.2 | 2.0 | 53 |
| 8-2 | 0.37 | 0.27 | 33 | 1.8 | 1.4 | 24 |  | 0.092 | 0.049 | 60 | 0.44 | 0.26 | 51 |
| 10-2 | 0.022 | 0.015 | 36 | 0.21 | 0.14 | 39 |  | 0.11 | 0.11 | 9.1 | 0.98 | 1.1 | 11 |
| 15-2 | 0.040 | 0.056 | 33 | 0.57 | 0.49 | 15 |  | 0.45 | 0.56 | 22 | 6.4 | 4.9 | 26 |
| 16-2 | 0.16 | 0.082 | 63 | 1.7 | 0.83 | 70 |  | 2.8 | 1.1 | 86 | 30 | 11 | 91 |
| 20-1 | 0.064 | 0.091 | 35 | 0.55 | 1.2 | 77 |  | 0.54 | 0.53 | 1.0 | 7.3 | 4.5 | 48 |
| 22-1 | 0.056 | 0.021 | 89 | 0.47 | 0.26 | 55 |  | 0.068 | 0.058 | 16 | 0.57 | 0.72 | 23 |
| mean | -- | -- | 41 | -- | -- | 44 |  | -- | -- | 48 | -- | -- | 56 |

--: Data under LOQ

: Participants were still breastfed.

%difference

Table S6 POP concentrations (ng/g lipid) in plasma from individual infants/toddlers. The code indicates the participant number (first number) and the sampling occasion number (second number).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Code | **Lipid (mg)** | ***p,p’*-DDE** | **HCB** | **B-HCH** | **Y-HCH** | **PCB**  **28** | **PCB**  **118** | **PCB**  **138** | **PCB**  **153** | **PCB**  **180** | **BDE 47** | **BDE**  **99** | **BDE**  **100** | **BDE 153** | **BDE**  **154** |
| **1\_1** | 3.3 | 80 | 9.8 | 5.4 | 5.4 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 7.1 | 1.1 | 2.3 | 9.4 | 1.1 |
| **1\_2** | 2 | 60 | 9.2 | 9.2 | 9.2 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 4.4 | 1.8 | 1.8 | 7.5 | 1.8 |
| **2\_1** | 5.2 | 14 | 3.5 | 3.5 | 3.5 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 1.7 | 0.7 | 0.7 | 1.1 | 0.7 |
| **2\_2** | 5 | 19 | 3.6 | 3.6 | 3.6 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 1.8 | 0.71 | 0.71 | 1.1 | 0.71 |
| **3\_1** | 2.5 | 140 | 21 | 7.1 | 7.1 | 1.4 | 5.2 | 8.4 | 11 | 3.9 | 3.5 | 1.4 | 1.4 | 2.2 | 1.4 |
| **3\_2** | 5.3 | 130 | 20 | 3.4 | 3.4 | 0.68 | 4.0 | 8.1 | 9.6 | 3.3 | 1.7 | 0.68 | 0.68 | 4.8 | 0.68 |
| **5\_1** | 4.9 | 24 | 3.7 | 3.7 | 3.7 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 1.8 | 0.71 | 0.71 | 1.1 | 0.71 |
| **5\_2** | 4 | 27 | 4.5 | 4.5 | 4.5 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 2.2 | 0.92 | 0.92 | 1.4 | 0.92 |
| **8\_1** | 3.6 | 3400 | 7.7 | 5.1 | 5.1 | 0.99 | 12 | 31 | 31 | 8.7 | 2.5 | 0.99 | 0.99 | 1.6 | 0.99 |
| **8\_2** | 2.9 | 2800 | 6.3 | 6.3 | 6.3 | 1.3 | 11 | 26 | 26 | 7.1 | 3.1 | 1.3 | 1.3 | 2.0 | 1.3 |
| **9** | 2.4 | 96 | 7.8 | 7.8 | 7.8 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 3.8 | 1.6 | 1.6 | 2.4 | 1.6 |
| **10\_1** | 0.8 | 70 | 23 | 23 | 23 | 4.7 | 4.7 | 4.7 | 4.7 | 4.76 | 11 | 4.7 | 4.7 | 7.1 | 4.7 |
| **10\_2** | 2.8 | 78 | 6.4 | 6.4 | 6.4 | 1.3 | 1.3 | 2.1 | 2.5 | 1.3 | 3.1 | 1.3 | 1.3 | 2.0 | 1.3 |
| **11** | 3.5 | 35 | 5.2 | 5.2 | 5.2 | 1.1 | 1.1 | 2.6 | 3 | 1.1 | 2.6 | 1.1 | 1.1 | 1.6 | 1.1 |
| **12\_1** | 5.9 | 94 | 7.0 | 3.1 | 3.1 | 0.62 | 0.96 | 1.8 | 2.3 | 0.93 | 1.5 | 0.62 | 0.62 | 1.6 | 0.62 |
| **12\_2** | 3 | 170 | 13 | 5.9 | 5.9 | 1.2 | 2.4 | 4 | 4.7 | 2.5 | 2.9 | 1.2 | 1.8 | 1.8 | 1.2 |
| **15\_1** | 5 | 240 | 11 | 6.6 | 3.6 | 0.71 | 1.3 | 2.5 | 2.9 | 1.6 | 3.2 | 0.71 | 1.2 | 1.1 | 0.71 |
| **15\_2** | 8.7 | 160 | 8.2 | 4.6 | 2.1 | 0.42 | 0.68 | 1.8 | 2 | 1 | 0.99 | 0.42 | 0.71 | 0.64 | 0.42 |
| **16\_2** | 4.8 | 150 | 28 | 15 | 3.8 | 1.5 | 3.6 | 4.0 | 3.9 | 1.7 | 3.9 | 0.78 | 1.2 | 1.1 | 0.78 |
| **17\_1** | 3 | 64 | 6.1 | 6.1 | 6.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 3.0 | 1.2 | 1.2 | 1.9 | 1.2 |
| **17\_2** | 3.4 | 51 | 5.3 | 5.3 | 5.3 | 1.1 | 1.1 | 1.1 | 1.6 | 1.1 | 2.6 | 1.1 | 1.1 | 1.1 | 1.1 |
| **18** | 5 | 120 | 6.7 | 3.7 | 3.7 | 0.71 | 0.71 | 2.8 | 4.3 | 2.7 | 1.8 | 0.71 | 0.71 | 1.5 | 0.71 |
| **20\_1** | 0.8 | 120 | 24 | 24 | 24 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 12 | 4.8 | 4.8 | 4.8 | 4.8 |
| **20\_2** | 3.4 | 120 | 13 | 5.4 | 5.4 | 1.1 | 2.6 | 3.4 | 3.7 | 2.4 | 2.6 | 1.1 | 1.1 | 3.2 | 1.1 |
| **22\_1** | 6.1 | 97 | 14 | 4.5 | 3.0 | 1.8 | 2.6 | 3.0 | 3.6 | 1.7 | 3.4 | 0.59 | 0.9 | 4.0 | 0.59 |
| **22\_2** | 4 | 100 | 15 | 4.6 | 4.6 | 1.7 | 2.7 | 3.3 | 4.0 | 1.7 | 2.3 | 0.92 | 0.92 | 3.2 | 0.92 |
| **23\_1** | 6.6 | 9.6 | 2.8 | 2.8 | 2.8 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 1.3 | 0.55 | 0.55 | 0.55 | 0.55 |
| **23\_2** | 5.1 | 10 | 3.6 | 3.6 | 3.6 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 1.8 | 0.71 | 0.71 | 0.71 | 0.71 |
| **24** | 5 | 70 | 6.5 | 3.7 | 3.7 | 1.9 | 1.6 | 1.8 | 1.9 | 0.71 | 1.8 | 0.71 | 0.71 | 0.71 | 0.71 |
| **25\_1** | 3.3 | 670 | 16 | 12 | 5.5 | 2.2 | 5.4 | 7.0 | 10 | 6.3 | 2.7 | 1.1 | 1.1 | 4.5 | 1.1 |
| **25\_2** | 5.4 | 760 | 19 | 10 | 3.4 | 1.9 | 5.1 | 8.3 | 11 | 6.6 | 1.6 | 0.67 | 1.4 | 4.2 | 0.67 |
| **26** | 7.8 | 190 | 12 | 4.5 | 2.3 | 0.47 | 1.5 | 4.3 | 6.0 | 3.4 | 1.1 | 0.47 | 0.47 | 2.3 | 0.47 |
| **27** | 4.3 | 84 | 13 | 6.7 | 4.2 | 0.85 | 5.6 | 27 | 42 | 20 | 2.1 | 0.85 | 0.85 | 1.4 | 0.85 |
| **QF\*** | -- | 100% | 55% | 24% | 0% | 18% | 52% | 61% | 64% | 52% | 12% | 0% | 21% | 36% | 0% |

: Data under LOQ, LOQ/(2)1/2 was used

QF\*: quantification frequency above LOQ.

Table S7 POP concentrations (ng/g dry weight) in faeces from individual infants/toddlers. The code indicates the participant number (first number) and the sampling occasion number (second number).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Sample amount (g)** | **Lipid amount**  **(g)** | ***p,p’*-DDE** | **HCB** | **B-HCH** | **Y-HCH** | **PCB**  **28** | **PCB**  **118** | **PCB**  **138** | **PCB**  **153** | **PCB**  **180** | **BDE 47** | **BDE**  **99** | **BDE**  **100** | **BDE 153** | **BDE**  **154** |
| **1\_1** | 0.59 | 0.094 | 0.43 | 0.006 | 0.009 | 0.006 | 0.017 | 0.013 | 0.01 | 0.036 | 0.010 | 0.35 | 0.01 | 0.015 | 0.0041 | 0.0018 |
| **1\_2** | 0.48 | 0.030 | 0.30 | 0.013 | 0.054 | 0.0084 | 0.013 | 0.067 | 0.029 | 0.060 | 0.009 | 0.52 | 0.062 | 0.0077 | 0.0091 | 0.0022 |
| **2\_1** | 0.52 | 0.052 | 0.031 | 0.015 | 0.0021 | 0.008 | 0.008 | 0.049 | 0.030 | 0.042 | 0.012 | 0.40 | 0.01 | 0.017 | 0.024 | 0.0021 |
| **2\_2** | 0.59 | 0.110 | 0.0094 | 0.006 | 0.0020 | 0.006 | 0.032 | 0.074 | 0.076 | 0.082 | 0.016 | 0.55 | 0.012 | 0.0071 | 0.044 | 0.0019 |
| **3\_1** | 0.70 | 0.105 | 1.7 | 0.025 | 0.0015 | 0.004 | 0.005 | 0.21 | 0.31 | 0.30 | 0.056 | 0.40 | 0.01 | 0.013 | 0.018 | 0.0015 |
| **3\_2** | 0.87 | 0.152 | 0.93 | 0.11 | 0.0012 | 0.008 | 0.020 | 0.13 | 0.23 | 0.20 | 0.020 | 0.63 | 0.054 | 0.015 | 0.045 | 0.0012 |
| **5\_1** | 0.92 | 0.215 | 0.19 | 0.036 | 0.0074 | 0.005 | 0.005 | 0.0034 | 0.0028 | 0.005 | 0.006 | 0.03 | 0.014 | 0.0067 | 0.0031 | 0.0012 |
| **5\_2** | 0.19 | 0.17 | 0.014 | 0.01 | 0.003 | 0.004 | 0.006 | 0.003 | 0.001 | 0.002 | 0.003 | 0.02 | 0.005 | 0.0048 | 0.0013 | 0.0006 |
| **8\_1** | 0.59 | 0.121 | 14 | 0.054 | 0.030 | 0.030 | 0.072 | 0.24 | 0.25 | 0.36 | 0.029 | 0.33 | 0.025 | 0.012 | 0.015 | 0.0022 |
| **8\_2** | 0.77 | 0.130 | 7.0 | 0.02 | 0.007 | 0.005 | 0.008 | 0.16 | 0.34 | 0.32 | 0.026 | 0.07 | 0.023 | 0.0087 | 0.0091 | 0.0014 |
| **9** | 0.81 | 0.154 | 0.86 | 0.10 | 0.044 | 0.0049 | 0.052 | 0.059 | 0.040 | 0.061 | 0.0077 | 0.51 | 0.068 | 0.032 | 0.0007 | 0.0013 |
| **10\_1** | 0.49 | 0.042 | 0.42 | 0.034 | 0.066 | 0.003 | 0.020 | 0.048 | 0.023 | 0.033 | 0.010 | 0.37 | 0.029 | 0.0052 | 0.0067 | 0.0022 |
| **10\_2** | 0.99 | 0.109 | 0.59 | 0.080 | 0.005 | 0.0055 | 0.012 | 0.014 | 0.016 | 0.018 | 0.006 | 0.11 | 0.030 | 0.0090 | 0.0041 | 0.0011 |
| **11** | 0.92 | 0.055 | 0.56 | 0.025 | 0.0012 | 0.015 | 0.020 | 0.039 | 0.045 | 0.059 | 0.0084 | 0.01 | 0.001 | 0.0097 | 0.0027 | 0.0012 |
| **12\_1** | 0.56 | 0.027 | 0.88 | 0.34 | 0.0019 | 0.006 | 0.018 | 0.048 | 0.003 | 0.052 | 0.011 | 0.05 | 0.002 | 0.016 | 0.37 | 0.0019 |
| **12\_2** | 0.29 | 0.035 | 2.9 | 0.21 | 0.0037 | 0.011 | 0.035 | 0.097 | 0.099 | 0.14 | 0.039 | 0.67 | 0.004 | 0.031 | 0.56 | 0.0037 |
| **15\_1** | 0.56 | 0.116 | 0.79 | 0.034 | 0.0019 | 0.0084 | 0.006 | 0.052 | 0.054 | 0.059 | 0.006 | 0.53 | 0.002 | 0.016 | 0.0043 | 0.0019 |
| **15\_2** | 0.81 | 0.043 | 0.28 | 0.016 | 0.0014 | 0.004 | 0.029 | 0.036 | 0.045 | 0.048 | 0.006 | 0.50 | 0.046 | 0.0087 | 0.0028 | 0.0013 |
| **16** | 0.30 | 0.029 | 0.88 | 0.18 | 0.15 | 0.022 | 0.022 | 0.12 | 0.10 | 0.12 | 0.021 | 1.9 | 0.24 | 0.14 | 0.025 | 0.0049 |
| **17\_1** | 0.54 | 0.048 | 0.59 | 0.066 | 0.083 | 0.029 | 0.15 | 0.018 | 0.018 | 0.025 | 0.0091 | 0.20 | 0.0049 | 0.0047 | 0.0061 | 0.0020 |
| **17\_2** | 0.52 | 0.040 | 0.32 | 0.098 | 0.005 | 0.008 | 0.41 | 0.015 | 0.021 | 0.020 | 0.006 | 0.29 | 0.002 | 0.017 | 0.0047 | 0.0020 |
| **18** | 0.45 | 0.068 | 1.1 | 0.15 | 0.037 | 0.031 | 0.033 | 0.015 | 0.023 | 0.035 | 0.020 | 0.24 | 0.022 | 0.0056 | 0.0076 | 0.0024 |
| **20\_1** | 0.47 | 0.043 | 2.0 | 0.088 | 0.15 | 0.014 | 0.045 | 0.049 | 0.062 | 0.078 | 0.041 | 0.53 | 0.097 | 0.075 | 0.11 | 0.0023 |
| **20\_2** | 0.57 | 0.125 | 0.58 | 0.14 | 0.13 | 0.004 | 0.12 | 0.28 | 0.14 | 0.27 | 0.007 | 0.11 | 0.032 | 0.021 | 0.09 | 0.0025 |
| **22\_1** | 0.61 | 0.064 | 0.71 | 0.12 | 0.0018 | 0.011 | 0.024 | 0.027 | 0.039 | 0.039 | 0.014 | 0.042 | 0.007 | 0.015 | 0.0050 | 0.0018 |
| **22\_2** | 0.90 | 0.108 | 0.50 | 0.02 | 0.0012 | 0.006 | 0.016 | 0.017 | 0.020 | 0.021 | 0.005 | 0.05 | 0.001 | 0.0099 | 0.0046 | 0.0012 |
| **23\_1** | 0.77 | 0.107 | 0.15 | 0.051 | 0.0014 | 0.015 | 0.13 | 0.0045 | 0.0049 | 0.0077 | 0.008 | 0.08 | 0.001 | 0.012 | 0.0032 | 0.0014 |
| **23\_2** | 0.45 | 0.153 | 0.097 | 0.086 | 0.25 | 0.025 | 0.022 | 0.017 | 0.017 | 0.035 | 0.022 | 0.11 | 0.012 | 0.0057 | 0.0043 | 0.0024 |
| **24** | 0.53 | 0.069 | 0.23 | 0.13 | 0.0020 | 0.004 | 0.010 | 0.0050 | 0.0049 | 0.007 | 0.011 | 0.03 | 0.002 | 0.017 | 0.004 | 0.0020 |
| **25\_1** | 0.60 | 0.095 | 6.8 | 0.047 | 0.18 | 0.025 | 0.020 | 0.21 | 0.16 | 0.38 | 0.26 | 0.71 | 0.099 | 0.054 | 0.29 | 0.0018 |
| **25\_2** | 0.52 | 0.038 | 9.2 | 0.081 | 0.12 | 0.008 | 0.023 | 0.27 | 0.46 | 0.57 | 0.52 | 0.85 | 0.16 | 0.14 | 0.43 | 0.0020 |
| **26** | 0.45 | 0.078 | 1.5 | 0.12 | 0.36 | 0.035 | 0.041 | 0.033 | 0.041 | 0.078 | 0.053 | 0.18 | 0.033 | 0.0035 | 0.0045 | 0.0015 |
| **27** | 0.85 | 0.078 | 0.90 | 0.077 | 0.0012 | 0.017 | 0.062 | 0.27 | 1.4 | 2.1 | 0.83 | 0.20 | 0.024 | 0.01 | 0.0057 | 0.0012 |
| **QF\*** | -- | -- | 88% | 70% | 39% | 21% | 21% | 79% | 67% | 73% | 18% | 88% | 48% | 15% | 24% | 0% |

: Data between LOD and LOQ, (LOD+LOQ)/2 is shown

: Data under LOQ, LOD/(2)1/2 was used

QF\*: quantification frequency above LOQ.

Table S8. General information about the cross-sectional dataset in this study.

|  |  |
| --- | --- |
| Participants (n=20) | Number  (% of all recruits) |
| Gender |  |
| Male | 8(40%) |
| Female | 12(60%) |
| Delivery type |  |
| Normal vaginal delivery (NVD) | 9(45%) |
| Caesarean Section (CS) | 11(55%) |
| Participants’ ages (months) (average ± standard deviation (median)) |  |
| at the first sampling time | 12±5.0 (8.9) |
| at the second sampling time | 16±5.0 (14) |
| of the cross-sectional dataset | 13±4.8 (14) |
| Nutrition |  |
| fully breast-fed | 0(0%) |
| weaning (partially breast-fed) | 5(25%) |
| weaned in between two sampling points | 3(15%) |
| weaned before the first sampling time point | 12(60%) |
| Antibiotic taken within a week before or after sampling | 1(5%)(Participant No.23) |
| Antibiotic taken on the sampling day | 1(5%)(Participant No.15) |
| Bowel complaints (within 3 days before and after sampling) | 0 |

Table S9 Information about the study participants.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Participant**  **NO.** | **Age (in months) when sampled (number of samples)** | **Feeding status** | | | | **How long spent/day (h)** | | |
| **Age (in months) when weaned** | **Breast-fed more than 50% of the total food when sampled(YES/NO)** | **Length of breast feeding (months)\*** | **Description of solid food** | **On floor** | **In car** | **With air con** |
| 01 | 19(2) | -- | NO | 12 | Mixed diet | 4 | 2 | 0 |
| 24(2) | 20 | -- | 13 | Mixed diet | 3 | 3 | 0 |
| 02 | 16(2) | 4 | -- | 3 | Mixed diet | 9 | 1 | 0 |
| 21(2) | 4 | -- | 3 | 9 | 1 | 0 |
| 03 | 16(2) | 12 | -- | 6 | Mixed diet | 10 | 0.5 | 0.5 |
| 21(2) | 12 | -- | 6 | 5 | 1 | -- |
| 05 | 20(2) | 8 | -- | 6 | Mixed diet | 11 | 1 | 4 |
| 24(1) | 8 | -- | 6 | 11 | 1 | 0 |
| 08 | 15(2) | 10 | -- | 5 | Mixed diet | 8 | 1 | 0 |
| 19(2) | 10 | -- | 5 | 4 | 0.5 | 0 |
| 09 | 16(1) | -- | NO | 11 | Mixed diet | 12 | 0.5 | 0 |
| -- | -- | -- | -- | -- | -- | -- | -- |
| 10 | 20(2) | 5 | -- | 4.5 | Mixed diet | 10 | 1 | 0 |
| 24(2) | 5 | -- | 4.5 | 4 | 1 | 0 |
| 11 | 15(1) | 2 | -- | 2 | -- | 10 | 0 | 0 |
| -- | -- | -- | -- | -- | -- | -- | -- |
| 12 | 4.7(2) | -- | YES | 4 | Mainly carbohydrate | 1 | 0.5 | 8 |
| 9.6(2) | -- | NO | 7 | Mainly protein | 8 | 0.5 | 8 |
| 15 | 8.6(2) | -- | NO | 6.3 | -- | 8 | 1 | 1 |
| 13(2) | 12 | -- | 8 | Mixed diet | 8 | 1 | 2 |
| 16 | -- | -- | -- | -- | -- | -- | -- | -- |
| 14(2) | -- | NO | 10 | -- | 6 | 1 | 4.3 |
| 17 | 8.9(2) | 0.5 | -- | 0.25 | -- | 10 | 1 | 0 |
| 14(2) | 0.5 | -- | 0.25 | 7 | 1 | -- |
| 18 | 8.2(2) | -- | NO | 6.6 | -- | 8 | 0 | 8 |
| -- | -- | -- | -- | -- |  |  |  |
| 20 | 8.9(2) | -- | NO | 7 | -- | 8 | 2 | 4 |
| 13(1) | -- | NO | 8.5 | 3 | 0.5 | 2 |
| 22 | 8.3(2) | -- | YES | 7.7 | Mixed diet | 5 | 0.5 | 1 |
| 13(2) | 9 | -- | 10 | Mixed diet | 6 | 1 | 3 |
| 23 | 8.9(2) | 1 | -- | 0.5 | Mixed diet | 7 | 1 | 0 |
| 14(1) | 1 | -- | 0.5 | Mixed diet | -- | -- | 0 |
| 24 | -- | -- | -- |  | -- | -- | -- | -- |
| 11(2) | -- | NO | 7.5 | 8 | 1 | 0 |
| 25 | 7.8(2) | -- | YES | 5.9 | Mainly carbohydrate | 6 | 1 | < 1 |
| 14(1) | -- | NO | 9 | Mixed diet | 6 | 1 | 2 |
| 26 | -- | -- | -- |  | -- | -- | -- | -- |
| 9.6(2) | -- | NO | 6.8 | -- | 5 | 1 | 0 |
| 27 | 5.6(2) | -- | YES | 5 |  | 2 | 0.5 | 10 |
| -- | -- | -- | -- | -- | -- | -- | -- |

: Participants who were being weaned.

: Participants who were weaned in between the two sampling time points.

: Participants who were weaned.

: Results used in the cross-sectional dataset

\*Breast feeding length: When calculating the breastfeeding time (months), we used 1 month for each month with solely breastfeeding while we used 0.5 months for any other month when the participant was partially breastfed.

Table S10 Information about the mothers (average ± standard deviation (median)) in this study.

|  |  |  |  |
| --- | --- | --- | --- |
| Participants’ characteristics (abbreviationsa) | Primaparous participants | Secundiparous participants | Information not provided |
| Number of participants | 14 | 4 | 2 |
| % of total number of participants | 70 | 20 | 10 |
| Mother’s age at sampling, year | 31 ± 4.9 (31) | 34 ± 2.9 (32) | -- |
| Mother’s BMIa before pregnancy, kg | 23 ± 3.1 (23) | 28 ± 4.8 (30) | -- |
| % of underweight (BMI<18.5) | 7 | 0 | -- |
| % of normal weight (18.5<BMI<24.9) | 67 | 25 | -- |
| % of overweight (25.0<BMI<29.9) | 26 | 0 | -- |
| % of obese (BMI 30) | 0 | 75 | -- |
| mother body mass increaseb, kg  under weight (BMI<18.5) | 2 ± 0 (2) | 0 | -- |
| normal weight (18.5<BMI<24.9) | 2.3 ± 1.2 (2) | 8 | -- |
| overweight (25.0<BMI<29.9) | 2 ± 1.2 (2) | 0 | -- |
| obese (BMI 30) | 0 | 3 ± 1 | -- |
| Region during last 5 years, % |  |  |  |
| Oceania | 100 | 100 | -- |
| Europe | 0 | 0 | -- |
| America | 0 | 0 | -- |
| Asia | 0 | 0 | -- |
| Africa | 0 | 0 | -- |
| Previous Region, % |  |  |  |
| Oceania | 81 | 100 | -- |
| Europe | 13 | 0 | -- |
| America | 0 | 0 | -- |
| Asia | 6 | 0 | -- |
| Africa | 0 | 0 | - |
| Birth Region, % |  |  |  |
| Oceania | 75 | 100 | -- |
| Europe | 6 | 0 | -- |
| America | 0 | 0 | -- |
| Asia | 19 | 0 | -- |
| Africa | 0 | 0 | -- |
| Mother’s dietary habits, %  mixed diet  vegetarian with consumption of milk and eggs  strictly vegetarian | 100  0  0 | 67  33 | --  --  -- |
| Eat anything in own garden, % |  |  |  |
| Yes | 0 | 33 | -- |
| No | 100 | 67 | -- |
| Mother’s frequency of consumption of fish, seafood, % |  |  |  |
| never | 5 | 33 | -- |
| < 1 time per week | 67 | 67 | -- |
| 1 time per week | 28 | 0 | -- |
| 2 times per week | 0 | 0 | -- |
| > 2 times per week | 0 | 0 | -- |
| Mother’s frequency of consumption of milk and dairy products, % |  |  |  |
| never | 0 | 0 | -- |
| < 1 servingC per day | 0 | 0 | -- |
| 1-3 servings per day | 100 | 100 | -- |
| > 3 servings per day | 0 | 0 | -- |
| Place of work, |  |  |  |
| indoors | 53 | 67 | -- |
| outdoors | 0 | 0 | -- |
| both | 47 | 33 | -- |
| Time spent at computer at work, hrs/week | 20 ± 11 (20) | 20 ± 15 (16) | -- |

a body mass index (BMI) was calculated as follows: BMI=[mass(kg)]/[height(cm)]2

b mother mass increase was calculated as: mother mass right after delivery – mother mass before pregnancy

C1 serve = 250 ml milk, 200 g yoghurt, or 30 g of cheese

Table S11 A summary of POP concentrations in plasma (ng/g lipid) and faeces (ng/g dw) for the cross-sectional dataset. The code indicates the participant number (first number) and the sampling occasion number (second number).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Plasma data** | | | | | | | | | | | | | | | |
|  | **Lipid (mg)** | ***p,p’*-DDE** | **HCB** | **B-HCH** | **Y-HCH** | **PCB**  **28** | **PCB**  **118** | **PCB**  **138** | **PCB**  **153** | **PCB**  **180** | **BDE 47** | **BDE**  **99** | **BDE**  **100** | **BDE 153** | **BDE**  **154** |
| **1\_1** | 3.3 | 80 | 9.8 | 5.4 | 5.4 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 7.1 | 1.1 | 2.3 | 9.4 | 1.1 |
| **2\_1** | 5.2 | 14 | 3.5 | 3.5 | 3.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.7 | 0.7 | 0.7 | 1.1 | 0.7 |
| **3\_2** | 5.3 | 130 | 20 | 3.4 | 3.4 | 0.68 | 4.0 | 8.1 | 9.6 | 3.3 | 1.7 | 0.68 | 0.68 | 4.8 | 0.68 |
| **5\_1** | 4.9 | 24 | 3.7 | 3.7 | 3.7 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 1.8 | 0.71 | 0.71 | 1.1 | 0.71 |
| **8\_1** | 3.6 | 3400 | 7.7 | 5.1 | 5.1 | 0.99 | 12 | 31 | 31 | 8.7 | 2.5 | 0.99 | 0.99 | 1.6 | 0.99 |
| **9** | 2.4 | 96 | 7.8 | 7.8 | 7.8 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 3.8 | 1.6 | 1.6 | 2.4 | 1.6 |
| **10\_2** | 2.8 | 78 | 6.4 | 6.4 | 6.4 | 1.3 | 1.3 | 2.1 | 2.5 | 1.3 | 3.1 | 1.3 | 1.3 | 2.0 | 1.3 |
| **11** | 3.5 | 35 | 5.2 | 5.2 | 5.2 | 1.1 | 1.1 | 2.6 | 3 | 1.1 | 2.6 | 1.1 | 1.1 | 1.6 | 1.1 |
| **12\_2** | 3 | 170 | 13 | 5.9 | 5.9 | 1.2 | 2.4 | 4 | 4.7 | 2.5 | 2.9 | 1.2 | 1.8 | 1.8 | 1.2 |
| **15\_1** | 5 | 240 | 11 | 6.6 | 3.6 | 0.71 | 1.3 | 2.5 | 2.9 | 1.6 | 3.2 | 0.71 | 1.2 | 1.1 | 0.71 |
| **16** | 4.8 | 150 | 28 | 15 | 3.8 | 1.5 | 3.6 | 4.0 | 3.9 | 1.7 | 3.9 | 0.78 | 1.2 | 1.1 | 0.78 |
| **17\_2** | 3.4 | 51 | 5.3 | 5.3 | 5.3 | 1.1 | 1.1 | 1.1 | 1.6 | 1.1 | 2.6 | 1.1 | 1.1 | 1.1 | 1.1 |
| **18** | 5 | 120 | 6.7 | 3.7 | 3.7 | 0.71 | 0.71 | 2.8 | 4.3 | 2.7 | 1.8 | 0.71 | 0.71 | 1.5 | 0.71 |
| **20\_2** | 3.4 | 120 | 13 | 5.4 | 5.4 | 1.1 | 2.6 | 3.4 | 3.7 | 2.4 | 2.6 | 1.1 | 1.1 | 3.2 | 1.1 |
| **22\_1** | 6.1 | 97 | 14 | 4.5 | 3.0 | 1.8 | 2.6 | 3.0 | 3.6 | 1.7 | 3.4 | 0.59 | 0.9 | 4.0 | 0.59 |
| **23\_2** | 5.1 | 10 | 3.6 | 3.6 | 3.6 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 1.8 | 0.71 | 0.71 | 0.71 | 0.71 |
| **24** | 5 | 70 | 6.5 | 3.7 | 3.7 | 1.9 | 1.6 | 1.8 | 1.9 | 0.71 | 1.8 | 0.71 | 0.71 | 0.71 | 0.71 |
| **25\_1** | 3.3 | 670 | 16 | 12 | 5.5 | 2.2 | 5.4 | 7.0 | 10 | 6.3 | 2.7 | 1.1 | 1.1 | 4.5 | 1.1 |
| **26** | 7.8 | 190 | 12 | 4.5 | 2.3 | 0.47 | 1.5 | 4.3 | 6.0 | 3.4 | 1.1 | 0.47 | 0.47 | 2.3 | 0.47 |
| **27** | 4.3 | 84 | 13 | 6.7 | 4.2 | 0.85 | 5.6 | 27 | 42 | 20 | 2.1 | 0.85 | 0.85 | 1.4 | 0.85 |
| **QFa** | -- | 100% | 65% | 30% | 0% | 20% | 55% | 70% | 75% | 55% | 20% | 0% | 20% | 40% | 0% |
| **Faeces data** | | | | | | | | | | | | | | | |
|  | **Sample amount (g)** | ***p,p’*-DDE** | **HCB** | **B-HCH** | **Y-HCH** | **PCB**  **28** | **PCB**  **118** | **PCB**  **138** | **PCB**  **153** | **PCB**  **180** | **BDE 47** | **BDE**  **99** | **BDE**  **100** | **BDE 153** | **BDE**  **154** |
| **1\_1** | 0.59 | 0.43 | 0.006 | 0.009 | 0.006 | 0.017 | 0.013 | 0.01 | 0.036 | 0.010 | 0.35 | 0.01 | 0.015 | 0.0041 | 0.0018 |
| **2\_1** | 0.52 | 0.031 | 0.015 | 0.0021 | 0.008 | 0.008 | 0.049 | 0.030 | 0.042 | 0.012 | 0.40 | 0.01 | 0.017 | 0.024 | 0.0021 |
| **3\_2** | 0.87 | 0.93 | 0.11 | 0.0012 | 0.008 | 0.020 | 0.13 | 0.23 | 0.20 | 0.020 | 0.63 | 0.054 | 0.015 | 0.045 | 0.0012 |
| **5\_1** | 0.92 | 0.19 | 0.036 | 0.0074 | 0.005 | 0.005 | 0.0034 | 0.0028 | 0.005 | 0.006 | 0.03 | 0.014 | 0.0067 | 0.0031 | 0.0012 |
| **8\_1** | 0.59 | 14 | 0.054 | 0.030 | 0.030 | 0.072 | 0.24 | 0.25 | 0.36 | 0.029 | 0.33 | 0.025 | 0.012 | 0.015 | 0.0022 |
| **9** | 0.81 | 0.86 | 0.10 | 0.044 | 0.0049 | 0.052 | 0.059 | 0.040 | 0.061 | 0.0077 | 0.51 | 0.068 | 0.032 | 0.0007 | 0.0013 |
| **10\_2** | 0.99 | 0.59 | 0.080 | 0.005 | 0.0055 | 0.012 | 0.014 | 0.016 | 0.018 | 0.006 | 0.11 | 0.030 | 0.0090 | 0.0041 | 0.0011 |
| **11** | 0.92 | 0.56 | 0.025 | 0.0012 | 0.015 | 0.020 | 0.039 | 0.045 | 0.059 | 0.0084 | 0.01 | 0.001 | 0.0097 | 0.0027 | 0.0012 |
| **12\_2** | 0.29 | 2.9 | 0.21 | 0.0037 | 0.011 | 0.035 | 0.097 | 0.099 | 0.14 | 0.039 | 0.67 | 0.004 | 0.031 | 0.56 | 0.0037 |
| **15\_1** | 0.56 | 0.79 | 0.034 | 0.0019 | 0.0084 | 0.006 | 0.052 | 0.054 | 0.059 | 0.006 | 0.53 | 0.002 | 0.016 | 0.0043 | 0.0019 |
| **16** | 0.30 | 0.88 | 0.18 | 0.15 | 0.022 | 0.022 | 0.12 | 0.10 | 0.12 | 0.021 | 1.9 | 0.24 | 0.14 | 0.025 | 0.0049 |
| **17\_2** | 0.52 | 0.32 | 0.098 | 0.005 | 0.008 | 0.41 | 0.015 | 0.021 | 0.020 | 0.006 | 0.29 | 0.002 | 0.017 | 0.0047 | 0.0020 |
| **18** | 0.45 | 1.1 | 0.15 | 0.037 | 0.031 | 0.033 | 0.015 | 0.023 | 0.035 | 0.020 | 0.24 | 0.022 | 0.0056 | 0.0076 | 0.0024 |
| **20\_2** | 0.57 | 0.58 | 0.14 | 0.13 | 0.004 | 0.12 | 0.28 | 0.14 | 0.27 | 0.007 | 0.11 | 0.032 | 0.021 | 0.09 | 0.0025 |
| **22\_1** | 0.61 | 0.71 | 0.12 | 0.0018 | 0.011 | 0.024 | 0.027 | 0.039 | 0.039 | 0.014 | 0.042 | 0.007 | 0.015 | 0.0050 | 0.0018 |
| **23\_2** | 0.45 | 0.097 | 0.086 | 0.25 | 0.025 | 0.022 | 0.017 | 0.017 | 0.035 | 0.022 | 0.11 | 0.012 | 0.0057 | 0.0043 | 0.0024 |
| **24** | 0.53 | 0.23 | 0.13 | 0.0020 | 0.004 | 0.010 | 0.0050 | 0.0049 | 0.007 | 0.011 | 0.03 | 0.002 | 0.017 | 0.004 | 0.0020 |
| **25\_1** | 0.60 | 6.8 | 0.047 | 0.18 | 0.025 | 0.020 | 0.21 | 0.16 | 0.38 | 0.26 | 0.71 | 0.099 | 0.054 | 0.29 | 0.0018 |
| **26** | 0.45 | 1.5 | 0.12 | 0.36 | 0.035 | 0.041 | 0.033 | 0.041 | 0.078 | 0.053 | 0.18 | 0.033 | 0.0035 | 0.0045 | 0.0015 |
| **27** | 0.85 | 0.90 | 0.077 | 0.0012 | 0.017 | 0.062 | 0.27 | 1.4 | 2.1 | 0.83 | 0.20 | 0.024 | 0.01 | 0.0057 | 0.0012 |
| **QF** | -- | 90% | 90% | 40% | 30% | 30% | 80% | 75% | 75% | 20% | 90% | 45% | 15% | 20% | 0% |

:Data between LOD and LOQ, (LOD+LOQ)/2 is shown

: For plasma samples, data under LOQ, LOQ/2 was used; For faeces samples, data under LOD, LOD/(2)1/2 was used

QFa: quantification frequency above LOQ.

Table S12. POP concentrations in infants’ and toddlers’ plasma and faeces samples based on the cross-sectional dataset in this study.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **POP concentrations in plasma samples1 (n=20)** | | | | | | | |
|  | **Chemical concentration** | | | | | | **Chemical LOD** |
|  | **QF%2** | **mean**  **(SD)** | **GM3 (95% CI)** | **median** | **min** | **max** | **mean**  **(SD)** |
| **Lipid content (%)** | **--** | 0.52 (0.078) | 0.52 (0.48-0.55) | 0.53 | 0.39 | 0.68 | **--** |
| ***p,p’*-DDE** | 100 | 290 (750) | 100 (55,180) | 96 | 9.6 | 3400 | 6.4 (1.9) |
| **HCB** | 65 | 10 (6.1) | 8.8 (6.7, 12) | 8.8 | <LOD | 28 | 6.4 (1.9) |
| **β-HCH** | 30 | 5.9 (2.9) | 5.4 (4.5, 6.5) | 5.3 | <LOD | 15 | 6.4 (1.9) |
| **γ-HCH** | 0 | 4.5 (1.3) | 4.3 (3.8,5.0) | 4 | <LOD | <LOD | 6.4 (1.9) |
| **PCB28** | 20 | 1.1 (0.47) | 1.0 (0.85, 1.3) | 1.1 | <LOD | 2.2 | 1.3 (0.38) |
| **PCB118** | 55 | 2.6 (2.6) | 1.8( 1.3, 2.7) | 1.6 | <LOD | 12 | 1.3 (0.38) |
| **PCB138** | 70 | 5.5 (8.4) | 2.7 (1.7, 4.7) | 2.7 | <LOD | 31 | 1.3 (0.38) |
| **PCB153** | 75 | 6.8 (11) | 3.3 (2.0, 5.7) | 3.3 | <LOD | 42 | 1.3 (0.38) |
| **PCB180** | 55 | 3.2 (4.4) | 2.0 (1.3, 3.0) | 1.7 | <LOD | 20 | 1.3 (0.38) |
| **BDE47** | 20 | 2.7 (1.3) | 2.5 (2.1,3.0) | 2.6 | <LOD | 7.1 | 3.1 (0.93) |
| **BDE99** | 0 | 0.91 (0.28) | 0.87 (0.75, 1.0) | 0.82 | <LOD | <LOD | 1.3 (0.38) |
| **BDE100** | 20 | 1.1 (0.44) | 0.99 (0.83, 1.2) | 1.0 | <LOD | 2.3 | 1.3 (0.38) |
| **BDE153** | 40 | 2.4 (2.1) | 1.9 (1.4, 2.5) | 1.6 | <LOD | 9.4 | 1.7 (0.72) |
| **BDE154** | 0 | 0.91 (0.28) | 0.87 (0.75, 1.0) | 0.82 | <LOD | <LOD | 1.3 (0.38) |
| **POP concentrations in faeces samples5 (n=20)** | | | | | | | |
|  | **Chemical concentration** | | | | | | **Chemical LOD** |
|  | **QF%** | **mean**  **(SD)** | **GM (95% CI)** | **median** | **min** | **max** | **mean**  **(SD)** |
| **Lipid content (%)** | **--** | 12 (5.0) | 11 (9.4, 14) | 11 | 6.0 | 23 | **--** |
| ***p,p’*-DDE** | 90 | 1.7 (3.3) | 0.61 (0.31,1.2) | 0.75 | <LOD | 14 | 0.038(0.017) |
| **HCB** | 90 | 0.090 (0.056) | 0.069 (0.045, 0.11) | 0.092 | <LOD | 0.21 | 0.036(0.021) |
| **β-HCH** | 40 | 0.055 (0.1) | 0.01 (0.0042, 0.026) | 0.0062 | <LOD | 0.36 | 0.012(0.0071) |
| **γ-HCH** | 30 | 0.014 (0.010) | 0.011 (0.0079, 0.016) | 0.0097 | <LOD | 0.035 | 0.031(0.025) |
| **PCB28** | 30 | 0.051 (0.089) | 0.026 (0.016, 0.043) | 0.022 | <LOD | 0.41 | 0.073(0.035) |
| **PCB118** | 80 | 0.084 (0.093) | 0.042 (0.023, 0.078) | 0.044 | <LOD | 0.28 | 0.02(0.017) |
| **PCB138** | 75 | 0.14 (0.31) | 0.046 (0.023, 0.078) | 0.041 | <LOD | 1.4 | 0.024(0.019) |
| **PCB153** | 75 | 0.20 (0.41) | 0.068 (0.035, 0.13) | 0.059 | <LOD | 2.1 | 0.04(0.023) |
| **PCB180** | 20 | 0.069 (0.19) | 0.019 (0.010, 0.034) | 0.013 | <LOD | 0.83 | 0.044(0.021) |
| **BDE47** | 90 | 0.37 (0.42) | 0.20 (0.11, 0.36) | 0.27 | <LOD | 1.9 | 0.050(0.027) |
| **BDE99** | 45 | 0.034 (0.054) | 0.014 (0.0073, 0.028) | 0.018 | <LOD | 0.24 | 0.016(0.013) |
| **BDE100** | 15 | 0.023 (0.030) | 0.015 (0.010,0.022) | 0.015 | <LOD | 0.14 | 0.057(0.033) |
| **BDE153** | 20 | 0.051 (0.14) | 0.0092 (0.004, 0.019) | 0.0049 | <LOD | 0.56 | 0.024(0.013) |
| **BDE154** | 0 | 0.0020 (0.001) | 0.0019 (0.0015, 0.0022) | 0.0019 | <LOD | <LOD | 0.0092(0.0044) |

1POPs concentration: LOQ/(2)1/2 was used for the concentration under quantification limit when the mean and GM were calculated.  

2QF%, quantificationfrequency (>LOQ).  3GM: geometric mean . 4NA: not analysed.

5POP concentrations: LOD/(2)1/2 was used for the concentrations <LOD when the mean and GM were calculated.. The average of LOD and LOQ was used for results between LOD and LOQ when the mean and GM were calculated.

Table S13 Pearson’ correlation coefficients between log-transformed faecal dry-weight based concentrations and plasma lipid-weight based concentrations for selected POPs

|  |  |  |  |
| --- | --- | --- | --- |
|  | *R* | P | n\* |
| ***p,p’*-DDE** | 0.88 | <0.05 | 18 |
| **HCB** | 0.12 | 0.72 | 12 |
| **PCB118** | 0.74 | <0.05 | 10 |
| **PCB138** | 0.85 | <0.05 | 12 |
| **PCB153** | 0.86 | <0.05 | 12 |

\*Only volunteers that had POP concentrations above the LOD in plasma and the LOQ in faeces were included.

Table S14 Parameters for estimating POP concentrations in faeces (Cf) from measured plasma concentrations (Cb) from infants/toddlers using linear regression log Cf = k log Cb + b.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Chemicals** | **Equations (linear regression between log10 transformed Cf and Cb** | **Y-intercept (b)** | **Slope (k)** | **r2** | **P1** | **n** |
| **Best-fit values** ± SE | **Best-fit values** ± SE |
| ***p,p’*-DDE** | log Cf =0.86×log Cb – 1.9 | -1.9 ± 0.24 | 0.86± 0.12 | 0.77 | <0.05 | 18 |
| **HCB** | log Cf =0.19×log Cb – 1.2 | -1.2± 0.46 | 0.19 ± 0.41 | 0.022 | 0.65 | 13 |
| **PCB 118** | log Cf =1.0×log Cb – 1.5 | -1.5 ± 0.20 | 1.0 ± 0.33 | 0.55 | <0.05 | 10 |
| **PCB 138** | log Cf =1.1×log Cb – 1.8 | -1.8 ± 0.18 | 1.1 ± 0.22 | 0.73 | <0.05 | 12 |
| **PCB 153** | log Cf =1.2×log Cb – 1.8 | -1.8 ± 0.20 | 1.2 ± 0.20 | 0.73 | <0.05 | 12 |

1: when P<0.05, the slope is significantly non-zero

Table S15 Kfb ((g lipid)/(g dw)) for each participant at each sampling time for selected POPs (The code indicates the participant number [first number] and the sampling occasion number [second number]).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **DDE** | **HCB** | **PCB 118** | **PCB 138** | **PCB 153** |
| **1\_1** | -- | -- | -- | -- | -- |
| **1\_2** | 0.005 | -- | -- | -- | -- |
| **2\_1** | -- | -- | -- | -- | -- |
| **2\_2** | -- | -- | -- | -- | -- |
| **3\_1** | 0.012 | -- | 0.040 | 0.037 | 0.027 |
| **3\_2** | 0.0072 | 0.0055 | 0.033 | 0.028 | 0.021 |
| **5\_1** | 0.0079 | -- | -- | -- | -- |
| **5\_2** | -- | -- | -- | -- | -- |
| **8\_1** | 0.004 | 0.007 | 0.020 | 0.008 | 0.012 |
| **8\_2** | 0.0025 | -- | 0.015 | 0.013 | 0.012 |
| **9** | 0.0089 | -- | -- | -- | -- |
| **10\_1** | 0.006 | -- | -- | -- | -- |
| **10\_2** | 0.0076 | -- | -- | 0.008 | 0.007 |
| **11** | 0.016 | -- | -- | 0.018 | 0.020 |
| **12\_1** | 0.0094 | 0.049 | 0.050 | -- | 0.023 |
| **12\_2** | 0.017 | 0.016 | 0.040 | 0.025 | 0.030 |
| **15\_1** | 0.0033 | 0.003 | 0.040 | 0.022 | 0.020 |
| **15\_2** | 0.0018 | -- | 0.053 | 0.025 | 0.024 |
| **16** | 0.006 | 0.006 | 0.033 | 0.025 | 0.031 |
| **17\_1** | 0.0092 | -- | -- | -- | -- |
| **17\_2** | 0.0063 | -- | -- | -- | -- |
| **18** | 0.0095 | 0.023 | -- | -- | -- |
| **20\_1** | 0.017 | -- | -- | -- | -- |
| **20\_2** | 0.0048 | 0.011 | 0.11 | 0.041 | 0.073 |
| **22\_1** | 0.0073 | 0.009 | 0.010 | 0.013 | 0.011 |
| **22\_2** | 0.005 | -- | 0.006 | 0.006 | 0.005 |
| **23\_1** | 0.016 | -- | -- | -- | -- |
| **23\_2** | 0.0097 | -- | -- | -- | -- |
| **24** | 0.003 | 0.020 | -- | -- | -- |
| **25\_1** | 0.010 | 0.029 | 0.039 | 0.023 | 0.038 |
| **25\_2** | 0.012 | 0.0043 | 0.053 | 0.055 | 0.052 |
| **26** | 0.008 | 0.010 | 0.022 | 0.010 | 0.013 |
| **27** | 0.011 | 0.006 | 0.048 | 0.052 | 0.050 |
| **Mean** | **0.0086** | **0.012** | **0.038** | **0.024** | **0.026** |
| **Standard deviation** | 0.0047 | 0.012 | 0.024 | 0.015 | 0.018 |
| **Median** | 0.0079 | 0.0078 | 0.039 | 0.023 | 0.022 |
| **25% Percentile** | 0.0018 | 0.0052 | 0.0063 | 0.0061 | 0.012 |
| **75% Percentile** | 0.010 | 0.017 | 0.050 | 0.033 | 0.033 |
| **Results in adults\*  (n)** | -- | 4 | 4 | 5 | 5 |
| **Mean** | -- | **0.024** | **0.023** | **0.018** | **0.016** |
| **Std. Deviation** | -- | 0.005 | 0.013 | 0.008 | 0.007 |
| **CV** | -- | 21% | 57% | 44% | 44% |

a: Reference: (Moser and McLachlan, 2001)

Table S16 Kfb ((g lipid)/(g dw)) of three sub-groups for selected POPs (The code in column “participants” indicates the participant number (first number), the sampling occasion number (second number) and the order of two bowel movements (third number))

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **The cross-sectional dataset (n=18)** | | | | | |
| **Participants** | **DDE** | **HCB** | **PCB118** | **PCB138** | **PCB153** |
| **3** | 0.0072 | 0.0055 | 0.033 | 0.028 | 0.021 |
| **5** | 0.0079 | -- | -- | -- | -- |
| **8** | 0.0041 | 0.0070 | 0.020 | 0.0080 | 0.012 |
| **9** | 0.0089 | -- | -- | -- | -- |
| **10** | 0.0076 | -- | -- | 0.0076 | 0.0072 |
| **11** | 0.016 | -- | -- | 0.018 | 0.020 |
| **12** | 0.017 | 0.016 | 0.0400 | 0.025 | 0.030 |
| **15** | 0.0033 | 0.0030 | 0.040 | 0.022 | 0.020 |
| **16** | 0.0061 | 0.0065 | 0.033 | 0.025 | 0.031 |
| **17** | 0.0063 | -- | -- | -- | -- |
| **18** | 0.0095 | 0.023 | -- | -- | -- |
| **20** | 0.0048 | 0.011 | 0.11 | 0.041 | 0.073 |
| **22** | 0.0073 | 0.0080 | 0.010 | 0.013 | 0.011 |
| **23** | 0.0097 | -- | -- | -- | -- |
| **24** | 0.0033 | 0.020 | -- | -- | -- |
| **25** | 0.010 | 0.0029 | 0.039 | 0.023 | 0.038 |
| **26** | 0.0079 | 0.0098 | 0.021 | 0.0095 | 0.0130 |
| **27** | 0.011 | 0.0059 | 0.048 | 0.051 | 0.050 |
| **The subgroup of participants with two Kfb vales estimated from two successive bowel movements (n-7)** | | | | | |
| **Participants** | **DDE** | **HCB** | **PCB118** | **PCB138** | **PCB153** |
| **3-2-1** | 0.0045 | 0.0039 | 0.034 | 0.025 | 0.020 |
| **3-2-2** | 0.0076 | 0.0075 | 0.034 | 0.031 | 0.022 |
| **8-1-1** | 0.0035 | 0.0083 | 0.027 | 0.0063 | 0.013 |
| **8-1-2** | 0.0047 | 0.0058 | 0.013 | 0.0096 | 0.011 |
| **10-2-1** | 0.0072 | -- | -- | 0.014 | 0.0088 |
| **10-2-2** | 0.0081 | -- | -- | 0.00047 | 0.006 |
| **15-1-1** | 0.0023 | 0.0040 | 0.051 | 0.021 | 0.02 |
| **15-1-2** | 0.0013 | 0.0017 | 0.053 | 0.029 | 0.028 |
| **16-2-1** | -- | 0.0061 | 0.043 | 0.026 | 0.041 |
| **16-2-2** | -- | 0.0068 | 0.022 | 0.025 | 0.021 |
| **20-2-1** | 0.011 | -- | -- | -- | -- |
| **20-2-2** | 0.025 | -- | -- | -- | -- |
| **22-1-1** | 0.01 | 0.0079 | 0.014 | 0.018 | 0.016 |
| **22-1-2** | 0.0047 | 0.0093 | 0.0065 | 0.0083 | 0.0058 |
| **The sub-group of participants with two Kfb values 5 months apart (n=10)** | | | | | |
| **Participants** | **DDE** | **HCB** | **PCB118** | **PCB138** | **PCB153** |
| **3-1** | 0.012 | -- | 0.040 | 0.037 | 0.027 |
| **3-2** | 0.0072 | -- | 0.033 | 0.028 | 0.021 |
| **8-1** | 0.0041 | -- | 0.020 | 0.008 | 0.012 |
| **8-2** | 0.0025 | -- | 0.015 | 0.013 | 0.012 |
| **10-1** | 0.006 | -- | -- | -- | -- |
| **10-2** | 0.0076 | -- | -- | -- | -- |
| **12-1** | 0.0094 | 0.049 | 0.050 | -- | 0.023 |
| **12-2** | 0.017 | 0.016 | 0.040 | -- | 0.030 |
| **15-1** | 0.0033 | -- | 0.040 | 0.022 | 0.020 |
| **15-2** | 0.0018 | -- | 0.053 | 0.025 | 0.024 |
| **17-1** | 0.0092 | -- | -- | -- | -- |
| **17-2** | 0.0063 | -- | -- | -- | -- |
| **20-1** | 0.017 | -- | -- | -- | -- |
| **20-2** | 0.0048 | -- | -- | -- | -- |
| **22-1** | 0.0073 | -- | 0.010 | 0.013 | 0.011 |
| **22-2** | 0.005 | -- | 0.0060 | 0.0060 | 0.0050 |
| **23-1** | 0.016 | -- | -- | -- | -- |
| **23-2** | 0.0097 | -- | -- | -- | -- |
| **25-1** | 0.010 | 0.0029 | 0.039 | 0.023 | 0.038 |
| **25-2** | 0.012 | 0.0043 | 0.053 | 0.055 | 0.052 |



Figure S1 Mean concentrations of POPs in plasma from the current study and a study of pooled samples collected in 2006-07 (Toms et al., 2009) (Bars show the standard deviation).



Figure S2 Concentrations of DDE, HCB, PCB118, PCB138 and PCB153 in plasma for participants at each sampling time plotted against their age (only data >LOD are shown)



Figure S3 Concentrations of DDE, HCB, PCB118, PCB138 and PCB153 in faeces for participants at each sampling time plotted against their age (only data >LOQ are shown)

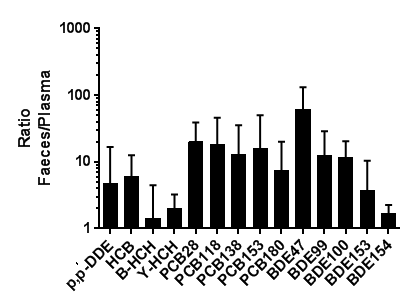


Figure S4 Geometric mean faeces to plasma ratio (bars represent ± 95% CI) of POP amount (ng) in 2g faeces and 0.5 mL plasma (n=20).

For plasma, POPs concentration: LOQ/(2)1/2 was used for the concentration under quantification limit when the mean and GM were calculated. For faeces, POP concentrations: LOD/(2)1/2 was used for the concentrations <LOD when the mean and GM were calculated.. The average of LOD and LOQ was used for results between LOD and LOQ when the mean and GM were calculated.



Figure S5 Comparison between the mean Cf value (error bar represents standard deviation) of the replicates (n=4) of a pooled faecal sample and the value of the two consecutive faecal samples (from the participant that had the highest percentage difference between the two consecutive samples). The data from participant 20 at the first sampling time point, participant 15 at the second sampling time point, participant 22 at the first sampling time point, participant 10 at the second sampling time point, participant 22 at the first sampling time point and participant 2 at the second sampling time were used here for *p,p’*-DDE, HCB, PCB118, PCB138, PCB153 and PBDE 47, respectively (Data source: Table S2 and S3).



Figure S6 Mean Kfb ((g lipid)/(g dw)) of p,p’-DDE, HCB, PCB118, PCB138 and PCB153 plotted against the age of the participants.



Figure S7 Comparison of Kfb ((g lipid)/(g dw))of DDE, HCB, PCB118, PCB138 and PCB153 for participants who were sampled during weaning against participants who were sampled after weaning.



Figure S8 Panels **a** and **b**: Kfb ((g lipid)/(g dw)) for p,p’-DDE and PCB153 for a single infant over 1 year from Chen et al. (2015); the dotted lines show the uncertainty bounds. Panels **c** through **j**: Kfb for the participants in this study plotted against age at the time of sampling for selected POPs (black symbols represent samples collected post-weaning, green symbols represent samples collected during weaning, and red symbols indicate that weaning occurred between first and second samples; the lines connect two sampling points from the same individual).

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