**Table 1.** Values of mean, median, standard deviation (SD), maximum and minimum, range, 25th and 75th percentile (Perce) for polyamines and isoamylamine for *n* samples of human breast milk, from day 0 to day 30 postpartum, and of infant formulas.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Amines in human breast milk (nmol/mL)** | | | | | | | | | |
| ***Putrescine*** | **Mean** | **Median** | **SD** | **Minimum** | **Maximum** | **Range** | **25th Perce** | **75th Perce** | ***n*** |
| Day 0 ɸɸɸ †††) | 12.35 | 11.47 | 7.84 | 2.20 | 27.09 | 24.89 | 5.28 | 19.16 | 10 |
| Day 1 | 9.48 | 7.85 | 5.37 | 4.44 | 19.32 | 14.88 | 5.28 | 13.12 | 10 |
| Day 3 | 6.39 | 5.36 | 3.10 | 2.56 | 12.12 | 9.56 | 3.85 | 9.18 | 10 |
| Day 5 a | 9.37 | 8.95 | 2.89 | 6.88 | 12.71 | 5.83 | 6.92 | 12.25 | 4 |
| Day 7 a | 12.28 | 11.44 | 6.97 | 4.88 | 30.02 | 25.14 | 6.04 | 16.04 | 13 |
| Day 15 a | 20.20 | 15.64 | 14.55 | 4.45 | 46.75 | 42.30 | 6.03 | 33.52 | 10 |
| Day 30 a | 16.18 | 15.73 | 6.04 | 7.46 | 25.48 | 18.03 | 11.61 | 21.45 | 8 |
| ***Spermidine*** | | | | | | | | | |
| Day 0 ɸɸ b | 30.52 | 21.48 | 23.85 | 9.15 | 85.39 | 76.25 | 13.92 | 43.58 | 10 |
| Day 1 b | 37.17 | 40.50 | 23.22 | 10.63 | 79.67 | 69.04 | 13.72 | 56.84 | 11 |
| Day 3 c | 60.43 | 55.22 | 38.46 | 12.94 | 115.05 | 102.12 | 19.40 | 103.46 | 10 |
| Day 5 \* c | 187.26 | 166.95 | 78.60 | 105.39 | 284.55 | 179.15 | 115.70 | 268.98 | 5 |
| Day 7 \*\*\* c | 220.53 | 198.95 | 152.01 | 22.07 | 525.00 | 502.92 | 94.92 | 316.65 | 14 |
| Day 15 \*\*\* c | 249.55 | 219.33 | 162.64 | 58.28 | 541.10 | 482.82 | 106.86 | 392.74 | 10 |
| Day 30 \*\* c | 192.76 | 180.77 | 84.69 | 75.81 | 313.23 | 237.42 | 120.60 | 274.72 | 8 |
| ***Spermine*** | | | | | | | | | |
| Day 0 c | 34.47 | 34.41 | 11.75 | 18.95 | 52.85 | 33.90 | 22.05 | 43.79 | 9 |
| Day 1 c | 55.82 | 59.75 | 23.75 | 22.55 | 83.64 | 61.09 | 32.59 | 78.21 | 10 |
| Day 3 c | 66.23 | 57.31 | 37.51 | 23.82 | 134.17 | 110.35 | 30.10 | 98.14 | 10 |
| Day 5 \* c | 157.60 | 124.89 | 98.98 | 61.33 | 312.08 | 250.75 | 78.95 | 252.60 | 5 |
| Day 7 \*\* c | 158.34 | 143.36 | 115.04 | 12.87 | 382.55 | 369.68 | 67.08 | 215.43 | 14 |
| Day 15 \* c | 135.55 | 86.60 | 80.86 | 33.74 | 248.91 | 215.17 | 75.03 | 223.99 | 9 |
| Day 30 \*\* c | 136.71 | 106.38 | 73.27 | 41.30 | 245.31 | 204.01 | 93.57 | 221.02 | 8 |
| ***Isoamylamine*** | | | | | | | | | |
| Day 0 a | 447.91 | 398.47 | 265.16 | 133.19 | 1007.72 | 874.53 | 238.19 | 625.64 | 10 |
| Day 1 b | 414.21 | 440.05 | 131.73 | 209.60 | 578.71 | 369.11 | 261.52 | 514.03 | 11 |
| Day 3 | 514.18 | 628.20 | 210.50 | 173.64 | 755.46 | 581.82 | 317.15 | 669.35 | 9 |
| Day 5 | 641.41 | 675.75 | 63.12 | 531.62 | 679.74 | 148.12 | 587.53 | 678.13 | 5 |
| Day 7 \* | 892.51 | 691.50 | 305.91 | 621.74 | 1340.11 | 718.37 | 648.37 | 1245.04 | 14 |
| Day 15 \* | 854.39 | 673.41 | 285.00 | 583.39 | 1264.75 | 681.36 | 631.55 | 1163.34 | 10 |
| Day 30 | 696.23 | 649.29 | 331.80 | 306.02 | 1432.08 | 1126.05 | 512.99 | 757.52 | 8 |
|  | | | | | | | | | |
| **Amines in infant formulas (nmol/mL)** | | | | | | | | | |
| **Putrescine** | 5.34 | 5.48 | 1.36 | 2.97 | 6.66 | 3.69 | 4.43 | 6.57 | 6 |
| **Spermidine** | 7.25 | 6.51 | 3.35 | 3.78 | 11.31 | 7.53 | 4.33 | 11.00 | 6 |
| **Spermine** | 2.99 | 3.06 | 1.59 | 0.85 | 5.04 | 4.19 | 1.53 | 4.38 | 6 |
| **Isoamylamine** | 781.75 | 732.45 | 286.56 | 443.40 | 1258.76 | 815.36 | 550.25 | 1017.89 | 6 |

Putrescine: \**P ≤* 0.05 in comparison with day 3. Spermidine and spermine: \**P ≤* 0.05, \*\**P ≤* 0.01 and \*\*\**P ≤* 0.001 for with respect to the day of giving birth. Isoamylamine: \**P ≤* 0.05 day 7 with respect to day 0 and also day 15 with respect to day 1.

†††*P ≤* 0.001 with respect to spermine.

ɸɸ*P ≤* 0.01 and ɸɸɸ*P ≤* 0.001 with respect to isoamylamine.

a*P ≤* 0.05, b*P ≤* 0.01 and c*P ≤* 0.001 compares infant formulas with different days of breast milk.

*P*-values calculated by non-parametric test.

**Table 2.** Values of mean, median, standard deviation (SD), maximum and minimum, range, 25th and 75th percentile (Perce) for polyamines and isoamylamine for *n* samples of human breast milk during the stages of breast milk: colostrum (days 1–5 postpartum), transitional (days 6–14), and mature (days 15–30).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Human breast milk (nmol/mL)** | | | | | | | | | |
| ***Putrescine*** | **Mean** | **Median** | **SD** | **Minimum** | **Maximum** | **Range** | **25th Perce** | **75th Perce** | ***n*** |
| Colostrum ɸɸɸ†††§§ | 8.10 | 6.84 | 4.46 | 2.56 | 19.32 | 16.76 | 94.92 | 288.31 | 22 |
| Transitional ɸɸɸ†††§§\* | 11.38 | 10.63 | 6.63 | 4.45 | 30.02 | 25.57 | 315.46 | 14.13 | 16 |
| Mature ɸɸɸ†††§§\*\*\* | 20.03 | 16.65 | 11.58 | 5.72 | 46.75 | 41.03 | 12.34 | 25.48 | 15 |
| **Spermidine** |  |  |  |  |  |  |  |  |  |
| Colostrum ɸɸ | 60.55 | 46.71 | 54.85 | 10.63 | 253.42 | 242.79 | 17.14 | 79.67 | 23 |
| Transitional ɸɸ\*\*\* | 205.70 | 173.66 | 142.04 | 22.07 | 525.00 | 502.92 | 94.92 | 288.31 | 18 |
| Mature ɸ\*\*\* | 240.01 | 186.92 | 135.80 | 75.81 | 541.10 | 465.29 | 130.37 | 314.60 | 15 |
| **Spermine** |  |  |  |  |  |  |  |  |  |
| Colostrum ɸɸɸ | 74.05 | 60.94 | 61.27 | 22.55 | 312.08 | 289.54 | 33.56 | 86.07 | 22 |
| Transitional ɸɸɸ\* | 146.11 | 132.14 | 107.55 | 12.87 | 382.55 | 369.68 | 59.19 | 201.30 | 18 |
| Mature ɸɸɸ\*\* | 138.08 | 103.43 | 72.07 | 41.30 | 248.91 | 207.61 | 85.86 | 219.60 | 14 |
| **Isoamylamine** |  |  |  |  |  |  |  |  |  |
| Colostrum | 472.52 | 486.50 | 172.86 | 173.64 | 755.46 | 581.82 | 315.46 | 636.80 | 22 |
| Transitional \*\*\* | 840.77 | 676.14 | 285.56 | 621.74 | 1340.11 | 718.37 | 643.33 | 1231.03 | 18 |
| Mature \*\* | 804.57 | 665.92 | 334.86 | 306.02 | 1432.08 | 1126.05 | 583.39 | 1155.30 | 15 |

\**P ≤* 0.05, \*\**P ≤* 0.01 and \*\*\**P ≤* 0.001 in comparison with colostrum.

ɸɸ*P ≤* 0.01 and ɸɸɸ*P ≤* 0.001 with respect to isoamylamine.

†††*P ≤* 0.001 with respect to spermidine.

§*P ≤* 0.05 and §§*P ≤* 0.01 with respect to spermine on the same stage.

*P*-values calculated by non-parametric test.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Amines in faeces of breast milk fed newborns (nmol/mg faeces)** | | | | | | | | | |
| ***Putrescine*** | **Mean** | **Median** | **SD** | **Minimum** | **Maximum** | **Range** | **25th Perce** | **75th Perce** | ***n*** |
| Day 0 ††† | 2.45 | 0.90 | 4.32 | 0.31 | 17.76 | 17.45 | 0.54 | 1.65 | 18 |
| Day 1 | 3.26 | 1.25 | 5.26 | 0.13 | 17.48 | 17.35 | 0.59 | 2.06 | 17 |
| Day 3 \*\*\* | 18.96 | 15.65 | 20.45 | 0.46 | 75.73 | 75.27 | 2.34 | 29.57 | 17 |
| Day 5 | 18.26 | 18.26 | 16.45 | 6.62 | 29.89 | 23.27 | 6.62 | . | 2 |
| Day 7 \*\* | 17.83 | 15.81 | 14.64 | 0.43 | 37.72 | 37.29 | 3.47 | 34.86 | 10 |
| Day 15 | 10.30 | 6.48 | 10.86 | 1.01 | 33.57 | 32.56 | 2.16 | 17.62 | 9 |
| Day 30 | 7.55 | 3.63 | 7.30 | 1.22 | 22.40 | 21.17 | 2.86 | 12.51 | 8 |
| **Spermidine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 0.13 | 0.08 | 0.15 | 0.04 | 0.57 | 0.53 | 0.05 | 0.12 | 18 |
| Day 1 | 0.22 | 0.13 | 0.22 | 0.04 | 0.88 | 0.85 | 0.06 | 0.38 | 17 |
| Day 3 \*\*\* | 1.03 | 0.47 | 1.35 | 0.09 | 5.32 | 5.23 | 0.12 | 1.76 | 17 |
| Day 5 | 0.87 | 0.87 | 1.01 | 0.16 | 1.58 | 1.42 | 0.16 | 1.58 | 2 |
| Day 7 \*\*\* b | 0.53 | 0.26 | 0.60 | 0.07 | 1.76 | 1.69 | 0.14 | 0.60 | 10 |
| Day 15 | 0.55 | 0.22 | 0.67 | 0.09 | 1.70 | 1.61 | 0.13 | 0.67 | 9 |
| Day 30 \*\* | 1.05 | 0.56 | 1.18 | 0.13 | 3.49 | 3.35 | 0.16 | 1.67 | 8 |
| **Spermine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 0.09 | 0.08 | 0.03 | 0.04 | 0.15 | 0.11 | 0.06 | 0.12 | 18 |
| Day 1 | 0.16 | 0.09 | 0.14 | 0.05 | 0.50 | 0.45 | 0.07 | 0.15 | 17 |
| Day 3 | 0.18 | 0.13 | 0.13 | 0.03 | 0.40 | 0.37 | 0.08 | 0.26 | 17 |
| Day 5 | 0.09 | 0.09 | 0.03 | 0.07 | 0.12 | 0.05 | 0.07 | 0.12 | 2 |
| Day 7 | 0.07 | 0.06 | 0.03 | 0.04 | 0.15 | 0.11 | 0.04 | 0.09 | 10 |
| Day 15 | 0.07 | 0.05 | 0.04 | 0.04 | 0.18 | 0.14 | 0.05 | 0.06 | 9 |
| Day 30 | 0.09 | 0.06 | 0.05 | 0.05 | 0.16 | 0.12 | 0.06 | 0.12 | 8 |
| **Isoamylamine** | |  |  |  |  |  |  |  |  |
| Day 0 ɸɸɸ | 6.61 | 5.78 | 3.73 | 1.00 | 13.21 | 12.21 | 4.01 | 9.81 | 18 |
| Day 1 | 5.06 | 3.94 | 3.43 | 0.97 | 11.81 | 10.84 | 2.35 | 7.84 | 17 |
| Day 3 | 6.39 | 5.34 | 4.87 | 1.16 | 18.14 | 16.97 | 1.64 | 10.28 | 17 |
| Day 5 | 7.31 | 7.31 | 2.59 | 5.47 | 9.14 | 3.67 | 5.47 | . | 2 |
| Day 7 \*\* | 10.16 | 10.33 | 1.41 | 7.11 | 12.01 | 4.90 | 9.50 | 11.16 | 10 |
| Day 15 \*\* | 10.70 | 10.17 | 2.15 | 6.47 | 13.19 | 6.73 | 9.70 | 12.94 | 9 |
| Day 30 \* | 10.85 | 10.42 | 2.76 | 7.37 | 14.80 | 7.43 | 8.25 | 13.68 | 8 |
| **Cadaverine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 1.78 | 0.04 | 4.90 | 0.02 | 16.04 | 16.02 | 0.03 | 0.12 | 18 |
| Day 1 | 2.23 | 0.26 | 4.14 | 0.02 | 16.06 | 16.04 | 0.05 | 3.90 | 17 |
| Day 3 \*\*\* | 18.50 | 3.29 | 24.67 | 0.04 | 72.13 | 72.09 | 0.56 | 40.59 | 17 |
| Day 5 | 18.11 | 18.11 | 25.10 | 0.36 | 35.86 | 35.50 | 0.36 | . | 2 |
| Day 7 \*\*\* | 18.09 | 8.40 | 20.16 | 0.05 | 65.44 | 65.39 | 4.86 | 29.45 | 10 |
| Day 15 \*\* | 11.50 | 8.69 | 9.25 | 0.66 | 24.52 | 23.86 | 3.03 | 21.29 | 9 |
| Day 30 \*\*\* | 14.12 | 15.09 | 8.70 | 1.83 | 28.02 | 26.18 | 5.38 | 19.85 | 8 |
| **Tyramine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 0.78 | 0.22 | 2.00 | 0.09 | 8.47 | 8.38 | 0.14 | 0.40 | 17 |
| Day 1 | 3.10 | 0.46 | 6.87 | 0.10 | 27.41 | 27.31 | 0.33 | 2.75 | 16 |
| Day 3 \*\* | 8.59 | 6.62 | 8.91 | 0.12 | 29.32 | 29.20 | 0.46 | 14.77 | 14 |
| Day 5 | 1.83 | 1.83 | 0.71 | 1.32 | 2.33 | 1.01 | 1.32 | . | 2 |
| Day 7 | 1.58 | 0.59 | 2.22 | 0.13 | 7.30 | 7.17 | 0.18 | 2.26 | 10 |
| Day 15 | 1.59 | 0.48 | 2.94 | 0.08 | 9.34 | 9.26 | 0.28 | 1.39 | 9 |
| Day 30 | 2.17 | 0.62 | 3.66 | 0.18 | 11.00 | 10.82 | 0.32 | 2.40 | 8 |

**Table 3.** Values of polyamines, isoamylamine, cadaverine, and tyramine (nmol/mg faeces) expressed as mean, median, standard deviation (SD), maximum and minimum, range, 25th and 75th percentile (Perce) for *n* samples of faeces of human breast milk fed newborns from day 0 to day 30 postpartum.

\**P ≤* 0.05, \*\**P ≤* 0.01 and \*\*\**P ≤* 0.001 in comparison with day 0.

†††*P ≤* 0.001 with respect to spermidine and spermine.

§§*P ≤* 0.01 and §§*P ≤* 0.001 isoamylamine with respect to the rest of the amines.

a*P ≤* 0.05 and b*P ≤* 0.01 compares the content of amines in the faeces of infant formulas fed newborns with breast milk fed newborns.

*P*-values calculated by non-parametric test.

ɸɸɸ ††† §

**Table 4.** Values of polyamines, isoamylamine, cadaverine, and tyramine (nmol/mg faeces) expressed as mean, median, standard deviation (SD), maximum and minimum, range, 25th and 75th percentile (Perce) for *n* samples of faeces of infant formula fed newborns day 0 to day 30 postpartum.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Amines in faeces of infant formula fed newborns (nmol/mg faeces)** | | | | | | | | | |
| ***Putrescine*** | **Mean** | **Median** | **SD** | **Minimum** | **Maximum** | **Range** | **25th Perce** | **75th Perce** | ***n*** |
| Day 0 ††† | 2.34 | 1.05 | 2.72 | 0.22 | 9.14 | 8.93 | 0.71 | 3.94 | 14 |
| Day 1 | 4.76 | 2.23 | 5.11 | 0.24 | 15.56 | 15.32 | 0.97 | 8.52 | 11 |
| Day 3 | 38.17 | 16.82 | 54.26 | 0.38 | 208.03 | 207.64 | 2.19 | 60.69 | 16 |
| Day 7 \*\* | 44.08 | 36.16 | 38.82 | 8.63 | 108.49 | 99.86 | 14.59 | 77.53 | 5 |
| Day 15 | 19.64 | 23.31 | 13.01 | 1.87 | 30.10 | 28.23 | 5.90 | 29.72 | 4 |
| Day 30 | 7.34 | 5.82 | 6.57 | 1.43 | 17.03 | 15.60 | 1.60 | 13.83 | 5 |
| **Spermidine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 0.06 | 0.06 | 0.02 | 0.04 | 0.10 | 0.06 | 0.05 | 0.07 | 14 |
| Day 1 | 0.13 | 0.13 | 0.09 | 0.04 | 0.26 | 0.22 | 0.06 | 0.21 | 11 |
| Day 3 \*\*\* | 0.72 | 0.24 | 0.83 | 0.07 | 2.29 | 2.21 | 0.10 | 1.41 | 16 |
| Day 7 \*\*\* b | 1.80 | 2.11 | 1.19 | 0.52 | 3.48 | 2.96 | 0.80 | 2.12 | 5 |
| Day 15 \* | 0.72 | 0.60 | 0.55 | 0.20 | 1.48 | 1.28 | 0.33 | 1.12 | 4 |
| Day 30 \*\*\* | 1.65 | 0.84 | 2.25 | 0.28 | 5.63 | 5.35 | 0.36 | 1.13 | 5 |
| **Spermine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 0.08 | 0.06 | 0.05 | 0.04 | 0.18 | 0.14 | 0.05 | 0.11 | 14 |
| Day 1 | 0.11 | 0.09 | 0.07 | 0.05 | 0.23 | 0.18 | 0.06 | 0.12 | 11 |
| Day 3 \*\* | 0.25 | 0.17 | 0.24 | 0.04 | 1.03 | 0.99 | 0.13 | 0.33 | 16 |
| Day 7 b | 0.22 | 0.22 | 0.09 | 0.12 | 0.32 | 0.20 | 0.14 | 0.29 | 5 |
| Day 15 | 0.26 | 0.26 | 0.17 | 0.11 | 0.42 | 0.31 | 0.12 | 0.41 | 4 |
| Day 30 | 0.17 | 0.12 | 0.14 | 0.07 | 0.41 | 0.34 | 0.10 | 0.15 | 5 |
| **Isoamylamine** | |  |  |  |  |  |  |  |  |
| Day 0 ɸɸ | 7.40 | 10.12 | 5.48 | 0.35 | 14.72 | 14.37 | 1.52 | 11.72 | 14 |
| Day 1 | 7.21 | 6.87 | 3.14 | 1.47 | 11.53 | 10.06 | 4.69 | 10.52 | 11 |
| Day 3 | 5.75 | 5.27 | 5.00 | 0.94 | 17.60 | 16.66 | 1.24 | 8.57 | 16 |
| Day 7 | 11.14 | 10.38 | 1.57 | 9.95 | 13.85 | 3.90 | 10.16 | 12.48 | 5 |
| Day 15 | 9.65 | 9.15 | 1.20 | 8.85 | 11.44 | 2.59 | 8.91 | 10.88 | 4 |
| Day 30 \* | 11.89 | 11.33 | 2.01 | 10.35 | 15.38 | 5.03 | 10.57 | 13.50 | 5 |
| **Cadaverine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 2.27 | 0.04 | 4.39 | 0.02 | 15.01 | 14.98 | 0.03 | 3.62 | 13 |
| Day 1 | 2.88 | 0.78 | 5.12 | 0.02 | 16.68 | 16.66 | 0.06 | 4.52 | 11 |
| Day 3 \* | 35.43 | 18.77 | 42.00 | 0.03 | 139.48 | 139.45 | 2.68 | 74.26 | 16 |
| Day 7 \*\*\* a | 73.97 | 108.30 | 52.48 | 12.81 | 116.83 | 104.02 | 16.66 | 114.12 | 5 |
| Day 15 | 30.42 | 9.81 | 43.03 | 7.13 | 94.93 | 87.80 | 7.74 | 73.71 | 4 |
| Day 30 | 45.76 | 18.81 | 48.10 | 2.87 | 105.73 | 102.87 | 7.27 | 97.72 | 5 |
| **Tyramine** |  |  |  |  |  |  |  |  |  |
| Day 0 | 0.63 | 0.27 | 0.82 | 0.06 | 2.88 | 2.81 | 0.15 | 0.83 | 14 |
| Day 1 | 5.55 | 1.24 | 8.33 | 0.14 | 23.01 | 22.87 | 0.23 | 10.53 | 9 |
| Day 3 | 6.96 | 1.70 | 9.83 | 0.10 | 34.58 | 34.49 | 0.47 | 10.01 | 14 |
| Day 7 \*\* b | 13.85 | 12.97 | 9.73 | 1.24 | 27.60 | 26.35 | 5.55 | 22.59 | 5 |
| Day 15 | 7.51 | 8.03 | 4.33 | 1.74 | 12.23 | 10.49 | 3.26 | 11.23 | 4 |
| Day 30 | 5.79 | 1.26 | 7.37 | 0.20 | 16.53 | 16.33 | 0.35 | 13.51 | 5 |

\**P ≤* 0.05, \*\**P ≤* 0.01 and \*\*\**P ≤* 0.001 in comparison with day 0.

†††*P ≤* 0.001 with respect to spermidine and spermine.

§§*P ≤* 0.01 and §§*P ≤* 0.001 isoamylamine with respect to the rest of the amines.

a*P ≤* 0.05 and b*P ≤* 0.01 compares the content of amines in the faeces of infant formulas fed newborns with breast milk fed newborns.

*P*-values calculated by non-parametric test.

**Table 5.** Values of polyamines, isoamylamine, cadaverine, and tyramine (nmol/mg faeces) expressed as mean, median, standard deviation (SD), maximum and minimum, range, 25th and 75th percentile (Perce) for *n* samples of faeces of newborns fed with breast milk or infant formulas for the days corresponding to the stages of breast milk: colostrum (days 1–5 postpartum), transitional (days 6–14), and mature (days 15–30).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Amines in faeces of breast milk fed newborns (nmol/mg faeces)** | | | | | | | | | |
| *Colostrum* | **Mean** | **Median** | **SD** | **Minimum** | **Maximum** | **Range** | **25th Perce** | **75th Perce** | ***n*** |
| Putrescine | 11.11 | 2.31 | 16.72 | 0.13 | 75.73 | 75.60 | 0.99 | 16.16 | 34 |
| Spermidine | 0.63 | 0.20 | 1.04 | 0.04 | 5.32 | 5.28 | 0.09 | 0.61 | 34 |
| Spermine | 0.17 | 0.13 | 0.13 | 0.03 | 0.50 | 0.47 | 0.07 | 0.26 | 34 |
| Isoamylamine | 5.73 | 4.60 | 4.20 | 0.97 | 18.14 | 17.17 | 1.82 | 9.28 | 34 |
| Cadaverine | 10.37 | 1.41 | 19.28 | 0.02 | 72.13 | 72.11 | 0.07 | 6.74 | 34 |
| Tyramine | 5.67 | 0.86 | 8.23 | 0.10 | 29.32 | 29.22 | 0.34 | 7.25 | 30 |
| *Transitional* |  |  |  |  |  |  |  |  |  |
| Putrescine | 17.15 | 15.66 | 13.26 | 0.18 | 37.72 | 37.54 | 4.30 | 29.46 | 16 |
| Spermidine | 0.65 | 0.26 | 0.78 | 0.07 | 2.66 | 2.58 | 0.14 | 1.26 | 16 |
| Spermine | 0.10 | 0.07 | 0.09 | 0.04 | 0.38 | 0.34 | 0.05 | 0.14 | 16 |
| Isoamylamine \* | 9.08 | 9.40 | 2.07 | 5.47 | 12.01 | 6.54 | 7.44 | 10.57 | 16 |
| Cadaverine | 19.95 | 7.97 | 26.66 | 0.05 | 93.61 | 93.56 | 0.52 | 31.15 | 16 |
| Tyramine | 2.21 | 1.53 | 2.63 | 0.13 | 8.66 | 8.53 | 0.22 | 2.66 | 16 |
| *Mature* |  |  |  |  |  |  |  |  |  |
| Putrescine | 8.57 | 4.41 | 9.10 | 1.01 | 33.57 | 32.56 | 2.38 | 13.47 | 18 |
| Spermidine | 0.82 | 0.32 | 0.93 | 0.09 | 3.49 | 3.40 | 0.13 | 1.64 | 18 |
| Spermine \*\* | 0.08 | 0.06 | 0.05 | 0.04 | 0.19 | 0.15 | 0.05 | 0.10 | 18 |
| Isoamylamine \*\*\* | 10.24 | 10.19 | 3.23 | 1.18 | 14.80 | 13.62 | 8.73 | 12.91 | 18 |
| Cadaverine \* | 12.52 | 12.09 | 8.60 | 0.66 | 28.02 | 27.36 | 4.23 | 20.36 | 18 |
| Tyramine | 2.03 | 0.57 | 3.20 | 0.08 | 11.00 | 10.92 | 0.32 | 1.85 | 18 |
|  |  |  |  |  |  |  |  |  |  |
| **Amines in faeces of infant formula fed newborns (nmol/mg faeces)** | | | | | | | | | |
| *Colostrum* | **Mean** | **Median** | **SD** | **Minimum** | **Maximum** | **Range** | **25th Perce** | **75th Perce** | ***n*** |
| Putrescine | 24.56 | 8.52 | 44.59 | 0.24 | 208.03 | 207.79 | 1.26 | 22.96 | 27 |
| Spermidine | 0.48 | 0.16 | 0.70 | 0.04 | 2.29 | 2.24 | 0.08 | 0.38 | 27 |
| Spermine | 0.19 | 0.14 | 0.20 | 0.04 | 1.03 | 0.99 | 0.07 | 0.23 | 27 |
| Isoamylamine | 6.34 | 6.16 | 4.33 | 0.94 | 17.60 | 16.66 | 1.65 | 9.96 | 27 |
| Cadaverine | 22.17 | 4.52 | 35.97 | 0.02 | 139.48 | 139.46 | 0.49 | 21.92 | 27 |
| Tyramine | 6.41 | 1.44 | 9.10 | 0.10 | 34.58 | 34.49 | 0.32 | 9.90 | 23 |
| *Transitional* |  |  |  |  |  |  |  |  |  |
| Putrescine | 44.08 | 36.16 | 38.82 | 8.63 | 108.49 | 99.86 | 14.59 | 77.53 | 5 |
| Spermidine \*\* a | 1.80 | 2.11 | 1.19 | 0.52 | 3.48 | 2.96 | 0.66 | 2.80 | 5 |
| Spermine a | 0.22 | 0.22 | 0.09 | 0.12 | 0.32 | 0.20 | 0.13 | 0.30 | 5 |
| Isoamylamine \* | 11.14 | 10.38 | 1.57 | 9.95 | 13.85 | 3.90 | 10.16 | 12.48 | 5 |
| Cadaverine \* a | 73.97 | 108.30 | 52.48 | 12.81 | 116.83 | 104.02 | 16.66 | 114.12 | 5 |
| Tyramine b | 13.85 | 12.97 | 9.73 | 1.24 | 27.60 | 26.35 | 5.55 | 22.59 | 5 |
| *Mature* |  |  |  |  |  |  |  |  |  |
| Putrescine | 12.81 | 10.62 | 11.28 | 1.43 | 30.10 | 28.67 | 1.83 | 23.31 | 9 |
| Spermidine \* | 1.24 | 0.75 | 1.70 | 0.21 | 5.63 | 5.42 | 0.32 | 1.31 | 9 |
| Spermine b | 0.21 | 0.12 | 0.15 | 0.07 | 0.42 | 0.35 | 0.10 | 0.40 | 9 |
| Isoamylamine \*\* | 10.89 | 10.79 | 1.99 | 8.85 | 15.38 | 6.53 | 9.15 | 11.53 | 9 |
| Cadaverine | 38.94 | 11.68 | 43.78 | 2.87 | 105.73 | 102.87 | 8.35 | 92.32 | 9 |
| Tyramine a | 6.56 | 7.81 | 5.91 | 0.20 | 16.53 | 16.33 | 0.88 | 11.36 | 9 |

\**P ≤* 0.05, \*\**P ≤* 0.01 and \*\*\**P ≤* 0.001 in comparison with colostrum stage.

a*P ≤* 0.05 and b*P ≤* 0.01 compares the content of amines in the faeces of infant formulas fed newborns with breast milk fed newborns.

*P*-values calculated by non-parametric test.