**Supplementary table 1: L, M and S values to produce any specified centile by sex and completed week of gestation**

|  |  |  |
| --- | --- | --- |
| ***Gestation*** | **Males** | **Females** |
| *n* | ***L*** | ***M*** | ***S*** | *n* | ***L*** | ***M*** | ***S*** |
| 24+0 | 419 | 1.649 | 688 | 0.164 | 312 | 1.416 | 637 | 0.168 |
| 25+0 | 372 | 1.501 | 789 | 0.175 | 314 | 1.219 | 749 | 0.192 |
| 26+0 | 488 | 1.340 | 903 | 0.189 | 375 | 1.042 | 836 | 0.216 |
| 27+0 | 479 | 1.155 | 1017 | 0.205 | 429 | 0.883 | 935 | 0.234 |
| 28+0 | 667 | 0.958 | 1137 | 0.219 | 558 | 0.732 | 1052 | 0.235 |
| 29+0 | 762 | 0.778 | 1300 | 0.222 | 649 | 0.587 | 1194 | 0.229 |
| 30+0 | 1 012 | 0.646 | 1481 | 0.215 | 789 | 0.459 | 1373 | 0.226 |
| 31+0 | 1 329 | 0.577 | 1636 | 0.207 | 1 011 | 0.375 | 1561 | 0.223 |
| 32+0 | 1 818 | 0.556 | 1843 | 0.202 | 1 522 | 0.341 | 1742 | 0.214 |
| 33+0 | 2 714 | 0.551 | 2066 | 0.196 | 2 099 | 0.331 | 1954 | 0.203 |
| 34+0 | 4 872 | 0.534 | 2284 | 0.185 | 4 033 | 0.323 | 2187 | 0.193 |
| 35+0 | 7 967 | 0.495 | 2519 | 0.174 | 6 554 | 0.313 | 2426 | 0.182 |
| 36+0 | 16 008 | 0.458 | 2750 | 0.167 | 13 862 | 0.317 | 2643 | 0.172 |
| 37+0 | 38 589 | 0.449 | 2992 | 0.155 | 34 796 | 0.349 | 2873 | 0.157 |
| 38+0 | 88 938 | 0.47 | 3232 | 0.139 | 81 984 | 0.404 | 3106 | 0.140 |
| 39+0 | 160 804 | 0.511 | 3418 | 0.126 | 155 076 | 0.460 | 3289 | 0.127 |
| 40+0 | 177 730 | 0.568 | 3573 | 0.121 | 175 559 | 0.507 | 3437 | 0.121 |
| 41+0 | 125 037 | 0.639 | 3729 | 0.119 | 120 713 | 0.547 | 3583 | 0.119 |
| 42+0 | 20 630 | 0.714 | 3811 | 0.119 | 18 133 | 0.591 | 3657 | 0.120 |

**Supplementary table 2: Expected and observed percentage (n) below selected centiles - All gestations: MBRRACE-UK vs UK-WHO (n=1,269,403 infants born in 2013-2014 used to construct centiles)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Centile** | **Expected** | **Observed % (n)** **MBRRACE-UK** | **Observed % (n)****UK-WHO** | **Risk difference** **(95% CI)** | **Observed %** **(n)****MBRRACE-UK** | **Observed % (n)****UK-WHO** | **Risk difference****(95% CI)** |
|  |  | Males (n=650 635) | Females (n=618 768) |
| 0.4th  | 0.38% | **0.51** (3 331) | **0.26**(1 703) | -0.25 (-0.27;-0.23) | **0.50** (3 091) | **0.36**(2 257) | -0.13(-0.16;-0.11) |
| 2nd  | 2.28% | **2.34** (15 216) | **1.51**(9 851) | -0.82(-0.87;-0.78) | **2.31**(14.286) | **1.73**(10 699) | -0.58 (-0.63;-0.53) |
| 9th | 9.13% | **8.76** (57 012) | **6.83** (44 429) | -1.93 (-2.03;-1.84) | **8.76** (54 2220) | **7.16**(44 273) | -1.61(-1.70;-1.51) |
| 25th | 25.24% | **24.44**(159 016) | **21.83**(142 046) | -2.61(-2.75;-2.46) | **24.79** (153 416) | **21.55** (133 325) | -3.25 (-3.40;-3.10) |
| 50th | 50.00% | **49.98** (325 188) | **47.46**(308 761) | -2.52 (-2.70;-2.35) | **50.06**(309 779) | **45.82**(283 517) | -4.24(-4.42;-4.07) |
| 75th | 74.76% | **75.51** (491 325) | **74.33**(483 603) | -1.19(-1.34;-1.04) | **75.40**(466552) | **72.42**(448 136) | -2.98(-3.13;-2.82) |
| 91st | 90.87% | **91.15**(593 058) | **90.63**(589 653) | -0.52(-0.62;-0.42) | **91.12**(563 851) | **89.54**(554 014) | -1.59(-1.69;-1.49) |
| 98th | 97.72% | **97.54**(634 646) | **97.31**(633 145) | -0.23 (-0.29;-0.18) | **97.54**(603 573) | **96.95**(599 889) | -0.60(-0.65;-0.54) |
| 99.6th  | 99.62% | **99.44**(646 965) | **99.30**(646 062) | -0.14 (-0.17;-0.11) | **99.45**(615 334) | **99.24**(614 096) | -0.20(-0.23;-0.17) |

\*risk difference= prevalence below a given centile according to UK-WHO minus prevalence according to MBRRACE-UK

**Supplementary table 3: Expected and observed percentage (n) below selected centiles: very preterm, late-moderate preterm, term: MBRRACE-UK vs UK-WHO (males born in 2013 and 2014)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***Very preterm (<32 weeks)*** ***(n=5,528)*** | ***Late-moderate preterm (32-36 weeks) (n=33,379)*** | ***Term (>36 weeks)*** ***(n=611,728)*** |
| Expected | *Observed* ***%*** *(n)**MBRRACE-UK* | *Observed* ***%*** *(n)**UK-WHO* | *Risk difference (95% CI)* | *Observed* ***%*** *(n)**MBRRACE-UK* | *Observed* ***%*** *(n)**UK-WHO* | *Risk difference (95% CI)* | *Observed* ***%*** *(n)**MBRRACE-UK* | *Observed* ***%*** *(n)**UK-WHO* | *Risk difference (95% CI)* |
| Below 0.4th (0.38%) | 0.51(28) | 1.23(68) | 0.72 (0.38;1.07) | 0.62(206) | 0.41 (137) | -0.21(-0.32;-0.10) | 0.51(3097) | 0.24(1498) | -0.26(-0.28;-0.24) |
| Below 2nd(2.28%) | 3.06(169) | 5.10(282) | 2.04 (1.31;2.78) | 2.80(933) | 2.38(795) | -0.41(-0.65;-0.17) | 2.31(14114) | 1.43(8774) | -0.87 (-0.92;-0.82) |
| Below 9th(9.13%) | 10.06(556) | 12.54(693) | 2.48(1.30;3.66) | 8.89(2967) | 8.37(2794) | -0.52(-0.94;-0.09) | 8.74(53489) | 6.69(40942) | -2.05(-2.15;-1.96) |
| Below 25th (25.24%) | 22.32 (1234) | 25.04(1384) | 2.71(1.13;4.30) | 22.99(7673) | 21.82(7283) | -1.17(-1.80;-0.54) | 24.54(150109) | 21.80(133379) | -2.73(-2.88;-2.59) |
| Below 50th (50%) | 46.15(2551) | 46.27(2558) | 0.13(-1.73;1.99) | 48.60(16222) | 45.64(15233) | -2.96(-3.72;-2.21) | 50.09(306415) | 47.57(290970) | -2.52(-2.70;-2.35) |
| Below 75th (74.76%) | 77.79 (4300) | 74.96(4144) | -2.82(-4.40;-1.24) | 77.39(25833) | 73.33(24476) | -4.07(-4.72;-3.41) | 75.39(461192) | 74.38(454983) | -1.10(-1.17;-0.86) |
| Below 91st (90.87%) | 93.94(5193) | 90.90(5025) | -3.04(-4.02;-2.05) | 92.10(30743) | 89.34(29821) | -2.76 (-3.20;-2.32) | 91.07(557122) | 90.70(554807) | -0.38(-0.48;-0.28) |
| Below 98th (97.72%) | 97.88 (5411) | 96.69(5345) | -1.19(-1.80;-0.59) | 97.20(32444) | 95.58(31902) | -1.62(-1.91;-1.34) | 97.56(596791) | 97.41(595898) | -0.15 (-0.20;--0.09) |
| Below 99.6th (99.62%) | 98.82(5463) | 98.21(5429) | -0.62(-1.07;-0.16) | 98.99(33041) | 98.05(32729) | -0.93(-1.12;-0.75) | 99.47(608461) | 99.37(607904) | -0.09 (-0.12;-0.06) |

\*risk difference= prevalence below a given centile according to UK-WHO minus prevalence according to MBRRACE-UK

**Supplementary table 4: Expected and observed percentage (n) below selected centiles: very preterm, late-moderate preterm, term: MBRRACE-UK vs UK-WHO (females born in 2013 and 2014)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***Very preterm (<32 weeks)*** ***(n=4,437)*** | ***Late-moderate preterm (32-36 weeks) (n=28,070)*** | ***Term (>36 weeks)*** ***(n=586,261)*** |
| Expected | *Observed* ***%*** *(n)**MBRRACE-UK* | *Observed* ***%*** *(n)**UK-WHO* | *Risk difference (95% CI)* | *Observed* ***%*** *(n)**MBRRACE-UK* | *Observed* ***%*** *(n)**UK-WHO* | *Risk difference (95% CI)* | *Observed* ***%*** *(n)**MBRRACE-UK* | *Observed* ***%*** *(n)**UK-WHO* | *Risk difference (95% CI)* |
| Below 0.4th (0.38%) | 0.63(28) | 1.13(50) | 0.50 (0.11;0.88) | 0.64(181) | 0.41(115) | -0.24(-0.35;-0.12) | 0.49(2882) | 0.36 (2092) | -0.13(-0.16;-0.11) |
| Below 2nd(2.28%) | 2.84(126) | 3.83(170) | 1.00(0.24;1.74) | 2.67(750) | 2.09(587) | -0.58(-0.83;-0.33) | 2.29(13410) | 1.70 (9942) | -0.59(-0.64;-0.54) |
| Below 9th(9.13%) | 8.74(388) | 12.01(533) | 3.27(2.00;4.54) | 8.94(2509) | 7.84(2200) | -1.10(-1.56;-0.64) | 8.75(51323) | 7.09 (41540) | -1.67(-1.77;--1.57) |
| Below 25th (25.24%) | 23.01(1021) | 26.75(1187) | 3.74(1.94;5.54) | 22.97(6447) | 20.20(5671) | -2.76(-3.44;-2.08) | 24.89(145948) | 21.57(126467) | -3.32(-3.48;-3.17) |
| Below 50th (50%) | 47.49(2107) | 49.56(2199) | 2.07(-0.01;4.15) | 48.74 (13682) | 42.89(12039) | -5.85(-6.67;-5.03) | 50.15(293990) | 45.93(269279) | -4.22(-4.40;-4.03) |
| Below 75th (74.76%) | 77.60(3443) | 76.13(3378) | -1.46(-3.22;0.29) | 77.46(21744) | 70.31(19737) | -7.15 (-7.87;-6.43) | 75.28(441365) | 72.50(425021) | -2.79(-2.95;-2.63) |
| Below 91st (90.87%) | 93.96(4169) | 91.41(4056) | -2.55(-3.63;-1.46) | 92.14(25864) | 87.77(24637) | -4.37(-4.87;-3.88) | 91.05(533818) | 89.61(525321) | -1.45(-1.56;-1.34) |
| Below 98th (97.72%) | 97.75(4337) | 96.55(4284) | -1.19(-1.89;-0.50) | 97.06(27244) | 94.76(26600) | -2.29(-2.62;-1.97) | 97.57(571992) | 97.06(569005) | -0.51(-0.57;-0.45) |
| Below 99.6th (99.62%) | 98.65(4377) | 97.81(4340) | -0.83(-1.38;-0.29) | 99.05(27804) | 97.65(27409) | -1.41(-1.62; -1.20) | 99.47(583153) | 99.33(582347) | -0.14(-0.17;-0.11) |

\*risk difference= prevalence below a given centile according to UK-WHO minus prevalence according to MBRRACE-UK

**Supplementary table 5: Differences in predicted birthweights at 2nd centile per gestational age: MBRRACE-UK vs UK-WHO (rounded to whole grams)**

|  |  |  |
| --- | --- | --- |
| ***Gestation*** | **Males** | **Females** |
| ***Weight at 2nd centile: MBRRACE-UK (g)*** | ***Weight at 2nd centile: UK-WHO (g)*** | ***Difference (MBRRACE-UK – UK-WHO): g*** ***(% of UK-WHO)*** | ***Weight at 2nd centile: MBRRACE-UKE (g)*** | ***Weight at 2nd centile: UK-WHO (g)*** | ***Difference (MBRRACE-UK – UKWHO): g*** ***(% of UK-WHO)*** |
| 24 | 429 | 474 | -45 (9.5) | 404 | 412 | -8 (1.9) |
| 25 | 480 | 542 | -62 (11.5) | 446 | 471 | -25 (5.3) |
| 26 | 533 | 602 | -69 (11.5) | 471 | 537 | -66 (12.3) |
| 27 | 584 | 674 | -90 (13.4) | 511 | 601 | -90 (15.0) |
| 28 | 644 | 746 | -102 (13.6) | 591 | 666 | -75 (11.3) |
| 29 | 754 | 826 | -72 (8.7) | 700 | 747 | -47 (6.3) |
| 30 | 895 | 919 | -24 (2.6) | 827 | 839 | -12 (1.4) |
| 31 | 1019 | 1030 | -10 (1.0) | 958 | 953 | 5 (0.5) |
| 32 | 1166 | 1159 | 8 (0.7) | 1097 | 1085 | 12 (1.1) |
| 33 | 1328 | 1315 | 14 (1.0) | 1263 | 1240 | 23 (1.9) |
| 34 | 1512 | 1485 | 27 (1.8) | 1448 | 1406 | 42 (3.0) |
| 35 | 1719 | 1675 | 44 (2.6) | 1648 | 1599 | 49 (3.1) |
| 36 | 1914 | 1881 | 32 (1.7) | 1836 | 1798 | 38 (2.1) |
| 37 | 2143 | 2088 | 55 (2.6) | 2060 | 2010 | 50 (2.5) |
| 38 | 2399 | 2294 | 105 (4.6) | 2308 | 2219 | 89 (4.0) |
| 39 | 2610 | 2494 | 116 (4.7) | 2510 | 2436 | 74 (3.0) |
| 40 | 2754 | 2669 | 85 (3.2) | 2655 | 2611 | 44 (1.7) |
| 41 | 2881 | 2826 | 54 (1.9) | 2777 | 2760 | 17 (0.6) |
| 42 | 2936 | 2964 | -28 (-1.0) | 2823 | 2896 | -73 (2.5) |

**Supplementary table 6: Differences in predicted birthweights at 50th centile per gestational age: MBRRACE-UK vs UK-WHO (rounded to whole grams)**

|  |  |  |
| --- | --- | --- |
| ***Gestation*** | **Males** | **Females** |
| ***Weight at 50th centile: MBRRACE-UK (g)*** | ***Weight at 50th centile: UK-WHO (g)*** | ***Difference (MBRRACE-UK – UKWHO): g*** ***(% of UK-WHO)*** | ***Weight at 50th centile: MBRRACE-UK (g)*** | ***Weight at 50th centile: UK-WHO (g)*** | ***Difference (MBRRACE-UK – UKWHO): g*** ***(% of UK-WHO)*** |
| 24 | 688 | 710 | -22 (3.1) | 637 | 660 | -23 (3.5) |
| 25 | 789 | 820 | -31 (3.8) | 749 | 760 | -11 (1.5) |
| 26 | 903 | 920 | -17 (1.8) | 836 | 870 | -34 (3.9) |
| 27 | 1017 | 1040 | -23 (2.2)  | 935 | 980 | -45 (4.6) |
| 28 | 1137 | 1160 | -23 (2.0) | 1052 | 1090 | -38 (3.5) |
| 29 | 1300 | 1290 | 10 (0.8) | 1194 | 1220 | -26 (2.1) |
| 30 | 1481 | 1440 | 41 (2.8) | 1373 | 1360 | 13 (1.0) |
| 31 | 1636 | 1610 | 26 (1.6) | 1561 | 1530 | 31 (2.0) |
| 32 | 1843 | 1800 | 43 (2.4) | 1742 | 1710 | 32 (1.9) |
| 33 | 2066 | 2020 | 46 (2.3) | 1954 | 1920 | 34 (1.8) |
| 34 | 2284 | 2250 | 34 (1.5) | 2187 | 2130 | 57 (2.7) |
| 35 | 2519 | 2490 | 29 (1.2) | 2426 | 2360 | 61 (2.8) |
| 36 | 2750 | 2730 | 20 (0.7) | 2643 | 2590 | 53 (2.0) |
| 37 | 2992 | 2960 | 32 (1.1) | 2873 | 2820 | 53 (1.9) |
| 38 | 3232 | 3180 | 52 (1.6) | 3106 | 3030 | 76 (2.5) |
| 39 | 3418 | 3380 | 38 (1.1) | 3289 | 3240 | 49 (1.5) |
| 40 | 3573 | 3560 | 13 (0.4) | 3437 | 3410 | 27 (0.8) |
| 41 | 3729 | 3720 | 9 (0.2) | 3583 | 3550 | 33 (0.9) |
| 42 | 3811 | 3870 | -59 (1.5) | 3657 | 3670 | -13 (-0.4) |

**Supplementary table 7: Differences in predicted birthweights at 98th centile per gestational age: MBRRACE-UK vs. UK-WHO (rounded to whole grams)**

|  |  |  |
| --- | --- | --- |
| ***Gestation*** | **Males** | **Females** |
| ***Weight at 98th centile: MBRRACE-UK (g)*** | ***Weight at 98th centile: UK-WHO (g)*** | ***Difference (MBRRACE-UK – UKWHO): g*** ***(% of UK-WHO)*** | ***Weight at 98th centile: MBRRACE-UK (g)*** | ***Weight at 98th centile: UK-WHO (g)*** | ***Difference (MBRRACE-UK – UKWHO): g*** ***(% of UK-WHO)*** |
| 24 | 894 | 936 | -42 (4.4) | 839 | 884 | -45 (5.1) |
| 25 | 1045 | 1088 | -43 (3.9) | 1026 | 1025 | 1(0.1) |
| 26 | 1226 | 1229 | -3 (0.2) | 1194 | 1181 | 13 (1.1) |
| 27 | 1423 | 1399 | 24 (1.7) | 1383 | 1341 | 42 (3.1) |
| 28 | 1639 | 1568 | 71 (4.5) | 1576 | 1501 | 75 (5.0) |
| 29 | 1904 | 1750 | 153 (8.8) | 1791 | 1685 | 115 (6.8) |
| 30 | 2164 | 1961 | 203 (10.4) | 2070 | 1883 | 187 (9.9) |
| 31 | 2371 | 2195 | 177 (8.1) | 2358 | 2121 | 237 (11.2) |
| 32 | 2652 | 2453 | 200 (8.2) | 2597 | 2362 | 235 (9.9) |
| 33 | 2946 | 2743 | 203 (7.4) | 2860 | 2642 | 218 (8.3) |
| 34 | 3201 | 3040 | 162 (5.3) | 3147 | 2910 | 237 (8.1) |
| 35 | 3473 | 3336 | 137 (4.1) | 3424 | 3191 | 233 (7.3) |
| 36 | 3752 | 3615 | 138 (3.8) | 3664 | 3463 | 201 (5.8) |
| 37 | 4000 | 3873 | 127 (3.3) | 3870 | 3722 | 148 (4.0) |
| 38 | 4197 | 4110 | 87 (2.1) | 4050 | 3939 | 111 (2.8) |
| 39 | 4332 | 4316 | 16 (0.4) | 4182 | 4146 | 36 (0.9) |
| 40 | 4482 | 4503 | -21 (0.4) | 4318 | 4316 | 2 (0.1) |
| 41 | 4654 | 4669 | -15 (0.3) | 4481 | 4451 | 30 (0.7) |
| 42 | 4748 | 4835 | -87 (1.8) | 4577 | 4556 | 21 (0.5) |