

Supplementary figure 1: Flow chart of participants within the Soweto First 1000-Day Study (S 1000) sub-study aOf eligible women approached at the Fetal Medicine Unit at Chris Hani Baragwanath Academic Hospital (CHBH), 85% consented to participate. Women who refused to participate were not different in age, BMI, or education, but participants were more likely to be married bMother-neonate pairs excluded from the final analyses were not different in any baseline maternal characteristics: age, parity, HIV/treatment status, smoking, marital status, education, household SES, weight, height, BMI

Supplementary table 1: Factor loadings of various foods or food groups in the Traditional diet pattern after principal component analysis (n=393)

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| ***Traditional diet pattern*** |
| ***Food or food group*** | ***Factor loading*** |
| **Other vegetables** | **0.366** |
| **Beans and pulses** | **0.319** |
| **Green vegetables** | **0.299** |
| **Salad vegetables** | **0.292** |
| **Boiled and baked potatoes** | **0.230** |
| **Maize, sorghum and oat porridge** | **0.220** |
| **Vegetable dishes** | **0.220** |
| **Root vegetables** | **0.218** |
| **Offal and traditional meats** | **0.204** |
| Chicken and turkey | 0.196 |
| Other fruit | 0.175 |
| Crackers | 0.167 |
| Citrus fruit | 0.165 |
| Crisps and popcorn | 0.162 |
| Diet soft drinks | 0.162 |
| Rice and pasta | 0.141 |
| Eggs and egg dishes | 0.114 |
| Tinned vegetables  | 0.112 |
| Fish and seafood | 0.095 |
| Puddings | 0.083 |
| Red meat | 0.075 |
| Miscellaneous (soup powder, condiments, sauces, etc.) | 0.073 |
| Brown and wholemeal bread | 0.072 |
| Cakes and biscuits | 0.063 |
| Yoghurt, buttermilk and maas | 0.063 |
| Cream | 0.061 |
| Nuts and nut spreads | 0.044 |
| Soft drinks | 0.044 |
| Cooking fats and salad oils | 0.043 |
| Reduced-fat milk | 0.041 |
| Cooked and tinned fruit | 0.029 |
| Full-fat milk | 0.012 |
| Processed meat | 0.009 |
| Sweets and chocolate | 0.009 |
| Added sugar (teaspoons) | 0.007 |
| Decaffeinated tea and coffee | 0.006 |
| Dried fruit | -0.003 |
| Fruit juice | -0.020 |
| Tea and coffee | -0.024 |
| Fat cakes and samosas | -0.045 |
| Reduced-fat spread | -0.045 |
| Roast potatoes and chips | -0.052 |
| Full-fat spread | -0.056 |
| Quiche and pizza | -0.056 |
| Sweet spreads | -0.091 |
| Breakfast cereals | -0.093 |
| Cheese and cottage cheese | -0.103 |
| White bread | -0.188 |
| Explained variance (%)  | 6.8 |

Foods or food groups with factor loadings ≥0.2 were classified as characteristic to the dietary pattern and therefore used to describe it (illustrated in bold)

Supplementary table 2: Neonatal anthropometry and body composition according to maternal and neonatal characteristics in urban black South Africans

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Total sample (n=393)** | ***Weight to length ratio (kg/m)*** | **Sub-sample (n=171)** | ***Fat mass index (kg/m3)b*** |
|  | **%** | **Median (IQR)** | **%** | **Median (IQR)** |
| **Maternal variables** |  |  |  |  |
| ***Demographic and health characteristics*** |  |  |  |  |
| Maternal age, y |  |  |  |  |
| <25 | 91 | 6.4 (5.8-6.8) | 34 | 3.6 (2.9-4.4) |
| 25-29 | 105 | 6.3 (5.9-6.7) | 42 | 3.8 (3.0-4.2) |
| 30-34 | 97 | 6.5 (6.0-6.9) | 46 | 3.9 (2.9-4.8) |
| 35-39 | 79 | 6.2 (5.6-6.7) | 39 | 3.6 (2.8-4.6) |
| ≥40 | 21 | 6.4 (6.1-6.7) | 10 | 3.2 (2.1-4.6) |
| P-valuea |  | 0.052 |  | 0.520 |
| Parity |  |  |  |  |
| Para 0 | 97 | 6.1 (5.6-6.6) | 44 | 3.1 (2.6-3.7) |
| Para 1 | 177 | 6.4 (6.0-6.8) | 71 | 3.9 (3.2-4.7) |
| Para ≥2 | 119 | 6.4 (6.0-6.8) | 56 | 3.9 (2.9-4.8) |
| P-valuea |  | **0.010** |  | **0.004** |
| HIV status |  |  |  |  |
| HIV-negative | 258 | 6.4 (6.0-6.8) | 114 | 3.6 (2.9-4.2) |
| HIV-positive (antenatal ART) | 92 | 6.4 (5.8-6.8) | 42 | 3.9 (2.9-4.8) |
| HIV-positive (pre-pregnancy ART) | 43 | 6.3 (5.8-6.7) | 15 | 4.0 (3.5-5.5) |
| P-valuea |  | 0.826 |  | 0.066 |
| Smokes/chews tobacco |  |  |  |  |
| No | 341 | 6.4 (5.9-6.8) | 148 | 3.6 (3.0-4.6) |
| Yes | 52 | 6.2 (5.9-6.6) | 23 | 3.4 (2.4-4.7) |
| P-valuea |  | 0.450 |  | 0.489 |
| ***Socio-economic characteristics*** |  |  |  |  |
| Maternal education |  |  |  |  |
| Primary | 7 | 6.4 (5.6-6.5) | 4 | 4.1 (3.6-4.7) |
| Secondary | 277 | 6.4 (5.9-6.8) | 118 | 3.6 (2.9-4.6) |
| Tertiary | 109 | 6.3 (6.0-6.8) | 49 | 3.6 (2.9-4.6) |
| P-valuea |  | 0.496 |  | 0.655 |
| Marital status [n=387] |  |  |  |  |
| Single | 236 | 6.4 (5.8-6.8) | 103 | 3.6 (2.9-4.7) |
| Married/cohabiting | 151 | 6.4 (5.9-6.8) | 64 | 3.8 (3.0-4.6) |
| P-valuea |  | 0.613 |  | 0.594 |
| Household socio-economic status |  |  |  |  |
| Low | 51 | 6.2 (6.0-6.5) | 23 | 3.7 (2.7-4.0) |
| Medium | 315 | 6.4 (5.9-6.8) | 135 | 3.6 (2.9-4.7) |
| High | 27 | 6.4 (5.7-6.8) | 13 | 3.1 (2.8-4.6) |
| P-valuea |  | 0.518 |  |  0.464 |
| ***Anthropometry*** |  |  |  |  |
| BMI at recruitment, kg/m2 (<14 weeks) |  |  |  |  |
| Normal weight (18.5-24.9) | 136 | 6.3 (5.8-6.6) | 55 | 3.6 (2.7-4.0) |
| Overweight (25-29.9) | 137 | 6.3 (5.8-6.8) | 62 | 3.9 (2.9-4.7) |
| Obese (≥30) | 120 | 6.5 (6.0-6.9) | 54 | 3.7 (3.2-4.6) |
| P-valuea |  | **0.028** |  |  0.488 |
| GWG, kg/week |  |  |  |  |
| Inadequate | 79 | 6.3 (5.5-6.7) | 35 | 3.6 (2.5-4.6) |
| Adequate | 86 | 6.2 (5.7-6.6) | 39 | 3.6 (2.5-4.6) |
| Excessive | 228 | 6.4 (6.0-6.9) | 97 | 3.7 (2.9-4.7) |
| P-valuea |  | **0.007** |  | 0.593 |
| ***Traditional dietary pattern adherence*** |  |  |  |  |
| Traditional |  |  |  |  |
| T1 (high) | 131 | 6.3 (5.9-6.8) | 71 | 3.8 (3.1-4.6) |
| T2 | 131 | 6.4 (6.0-6.8) | 55 | 3.7 (2.5-4.4) |
| T3 (low) | 131 | 6.3 (5.8-6.7) | 45 | 3.6 (2.8-4.6) |
| P-valuea |  |  0.368 |  | 0.441 |
| **Neonatal variables** |  |  |  |  |
| Sex |  |  |  |  |
| Male | 204 | 6.4 (5.9-6.8) | 97 | 3.5 (2.5-4.4) |
| Female | 189 | 6.4 (5.9-6.7) | 74 | 3.7 (3.2-4.8) |
| P-valuea |  | 0.947 |  | **0.034** |
| Gestational age at birth, w |  |  |  |  |
| 37-38 | 144 | 6.2 (5.7-6.7) | 71 | 3.6 (2.9-4.6) |
| 39-40 | 219 | 6.4 (6.0-6.8) | 87 | 3.7 (2.8-4.6) |
| 41-42 | 30 | 6.5 (6.1-7.2) | 13 | 3.4 (3.0-3.7) |
| P-valuea |   | **0.003** |   | 0.744 |

Abbreviations: ART, antiretroviral treatment; BMI, body mass index; FMI, fat mass index; GWG, gestational weight gain; WLR, weight-to-length ratio IoM GWG ranges (kg/week): inadequate, normal weight <0.35, overweight <0.23, obese <0.17; adequate, normal weight 0.35-0.50, overweight 0.23-0.33, obese 0.17-0.27; excessive, normal weight >0.50, overweight >0.33, obese >0.27 aKruskal-Wallis test; significant results are presented in bold (p<0.05) bMeasured by air displacement plethysmography (ADP; Peapod) or dual-energy x-ray absorptiometry (DXA) corrected for the measurement differences between techniques