**Changes in dietary patterns from preconception to during pregnancy and its association with socio-demographic and lifestyle factors**

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Online supplementary materials

**Supplementary Table 1.** Changes of each food components from preconception to during pregnancy (n= 621) a

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Dietary patterns  | Food components  | Before pregnancy | During pregnancy | Mean difference | *p-value b* | Spearman’s correlation coefficient  | *p-value b* |
| HEI-2015 score c | Total FruitsWhole FruitsTotal VegetablesGreens and BeansWhole GrainsDairyTotal ProteinSeafood & Plant Pro.Fatty AcidsRefined GrainsSodiumAdded SugarsSaturated Fats | 4.26 (1.18)4.36 (1.08)3.51 (1.27)4.75 (0.75)5.07 (4.28)5.42 (3.40)4.79 (0.67)1.59 (1.05)3.04 (3.16)6.29 (3.53)0.03 (0.53)9.52 (1.72)5.76 (3.80) | 4.38 (1.08)4.61 (0.88)3.85 (1.14)4.89 (0.50)6.77 (3.80)5.31 (3.61)4.86 (0.50)1.91 (1.09)2.38 (2.96)6.82 (3.27)0.35 (1.72)9.65 (1.50)3.56 (4.17) | 0.12 (1.26)0.26 (1.11)0.34 (1.21)0.14 (0.72)1.70 (4.88)-0.12 (3.67)0.07 (0.65)0.32 (1.22)-0.65 (3.71)0.53 (4.49)0.32 (1.81)0.12 (1.80)-2.19 (5.35) | 0.02< 0.0001< 0.0001< 0.0001< 0.00010.420.008< 0.0001< 0.00010.004< 0.00010.09< 0.0001 | 0.380.390.490.320.300.470.210.370.280.100.010.370.10 | < 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.00010.010.77< 0.00010.01 |
| Meat, high fats and sugar d | BeefChickenSausage CakesPotato chipsPork Baconlamb Meat piesSalamiPizza Fried potatoesFried fishPasta Chocolate Hamburger Ice-creamSweet biscuits  | 35.14 (34.99)30.73 (22.49)6.44 (9.54)10.89 (9.66)3.77 (3.38)4.56 (7.53)2.43 (3.25)12.04 (15.77)12.77 (15.95)4.11 (7.95)19.39 (18.87)18.85 (23.65)5.13 (9.79)54.12 (44.56)10.35 (14.07)7.88 (9.94)9.43 (14.58)6.14 (8.83) | 37.96 (28.92)28.87 (21.37)8.12 (9.60)14.08 (15.33)3.82 (5.74)5.49 (7.94)3.08 (3.24)16.31 (16.82)13.65 (12.77)3.60 (6.40)19.51 (17.50)17.38 (18.87)4.66 (5.99)43.86 (31.92)12.77 (15.02)7.86 (9.07)11.28 (15.07)8.28 (9.96) | 2.82 (35.52)-1.85(24.56)1.68 (10.85)3.19 (18.09)0.05 (6.12)0.92 (8.35)0.65 (3.53)4.27 (17.78)0.88 (17.70)-0.51 (9.28)0.11 (20.57)-1.47(25.11)-0.47(10.30)-10(43.16)2.42 (15.35)-0.03(10.67)1.84 (17.49)2.14 (10.62) | 0.050.06< 0.0001< 0.00010.840.006< 0.0001< 0.00010.210.170.890.140.25< 0.0001<0.00010.950.009< 0.0001 | 0.500.460.440.380.430.580.480.510.310.410.330.370.300.380.470.430.420.39 | < 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001 |
| Vegetables & grains d  | Mushrooms Onions Other beansGarlic Zucchini Tofu CapsicumTomatoes Rice Pasta Spinach | 5.72 (5.95)5.92 (5.39)2.86 (7.02)0.63 (0.54)7.98 (9.32)2.24 (6.29)3.01 (2.96)11.55 (10.60)38.47 (43.45)54.12 (44.56)4.31 (6.72) | 5.26 (5.28)6.24 (5.27)3.09 (5.37)0.65 (0.49)8.83 (8.68)1.97 (5.58)2.75 (2.72)11.40 (9.93)29.92 (29.13)43.86 (31.92)5.46 (7.29) | -0.46 (5.68)0.32 (5.59)0.24 (6.82)0.02 (0.55)0.84 (9.52)-0.27 (6.71)-0.26 (3.11)-0.15 (11.98)-8.56 (42.75)-10.26(43.16)1.15 (8.25) | 0.040.150.390.370.030.320.040.75< 0.0001< 0.00010.0005 | 0.590.460.590.480.520.560.490.370.360.380.46 | < 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001 |
| Traditional vegetable d  | Pumpkins Peas Cauliflower CarrotsBroccoli Green beansCabbage Spinach Potatoes Zucchini | 8.66 (10.39)9.00 (10.94)6.13 (7.60)12.01 (10.34)9.45 (8.09)6.31 (6.88)3.82 (7.09)4.31 (6.72)25.16 (26.59)7.98 (9.32) | 10.28 (10.92)10.23 (10.93)6.60 (7.73)13.74(9.74)11.57 (8.52)7.26 (6.67)3.39 (5.30)5.46 (7.29)24.69 (24.54)8.83 (8.68) | 1.61 (11.85)1.23 (10.99)0.45 (8.16)1.73 (10.97)2.12 (9.31)0.95 (7.75)-0.42 (7.09)1.15 (8.25)-0.48 (28.46)0.84 (9.52) | 0.00070.0050.160.0001< 0.00010.0020.130.00050.670.04 | 0.460.520.450.400.380.340.460.460.370.52 | < 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001 |
| Fruits d  | Melon Peaches ApricotsPineappleStrawberries Pears Mango Yoghurt | 16.16 (20.86)14.69 (24.74)6.82 (14.15)7.32 (11.12)8.44 (11.12)13.97 (21.70)7.15 (13.62)42.09 (51.81) | 18.51 (22.22)14.38 (23.75)6.76 (12.08)7.46 (11.87)9.81 (12.24)22.52 (26.93)6.51 (11.47)52.44 (52.05) | 2.35 (24.66)-0.31 (29.07)-0.06 (16.41)0.14 (14.88)1.38 (13.28)8.55 (28.04)-0.6 (14.61)10.36 (57.20) | 0.020.790.920.810.01< 0.00010.27< 0.0001 | 0.410.430.400.360.380.440.510.47 | < 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001< 0.0001 |

a Values are mean (SD) or correlation coefficients (r), b *p-values* from paired t-test or Spearman’s correlation. c The first 13 food components were obtained from HEI-2015 score. d The four dietary patterns obtained from factor analysis (meats, high-fats and sugar; vegetable and grains; traditional vegetable; and fruits patterns).

**Supplementary Table 2.** Women characteristics before pregnancy according to changes in dietary patterns(n= 621) a

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Characteristics**  | **HEI-2015 score** | **Western diets** | **Vegetables &** **grains** | **Traditional** **Vegetables** | **Fruits**  |
| women age, yearsp-values b | -0.080.06 | 0.050.18 | 0.040.33 | 0.050.18 | 0.030.51 |
| Area of residence c Urban Rural/remotep-values b | 1.25 (12.66)0.51 (12.75)0.48 | 1.93 (128.66)13.23 (148.79)0.32 | -18.09(83.09)-16.51(76.89)0.81 | 8.10 (53.43)10.57 (68.18)0.61 | 19.18(99.52)25.88(97.66)0.41 |
| Marital status c Married De facto/separated/divorcedSinglep-values b | 0.79 (12.54)2.10 (13.05)-4.58 (21.09)0.43 | 9.72 (133.41)-11.76(152.93)24.17 (124.59)0.35 | -16.54(78.43)-24.28(87.49)44.42(159.29)0.21 | 9.45(56.54)6.34(71.13)46.90(119.91)0.40 | 18.58(97.51)35.12(100.27)103.40(163.68)0.32 |
| Educational status c Up to year 12 or equivalentTrade/apprenticeship/certificate/diplomaUniversity/higher degreep-values b | 2.01 (14.87)0.46 (11.52)0.97 (12.22)0.63 | 18.50 (146.06)-11.12(153.45)7.79 (124.95)0.21 | -6.12(71.19)-11.87(75.43)-22.42(84.70)0.13 | 12.15(67.64)1.44(64.08)10.52(55.31)0.26 | 6.67(98.21)30.25(91.26)23.38(100.66)0.17 |
| Smoking status c Never smokedEx-smokerCurrent smokerp-values b | 0.39 (12.07)1.31 (12.79)2.85 (14.86)0.18 | 5.85 (133.14)2.96 (126.98)12.98 (157.04)0.85 | -13.30 (74.18)-28.28(79.36)-23.68(100.12)0.18 | 10.22(55.50)5.92(64.14)7.35(69.69)0.77 | 24.25(97.52)3.49(99.95)26.68(102.03)0.15 |
| Alcohol intake c Non-drinkerRarely drinkerLow-risk drinkerRisky drinkerp-values b | 4.20 (15.10)1.10 (13.22)0.69 (11.92)0.11 (17.80)0.43 | 14.48 (148.31)7.96 (162.81)4.24 (123.76)16.92 (181.92)0.94 | -17.63(70.86)-8.70(74.90)-18.34(77.06)-54.13(148.37)0.08 | 10.32(52.86)2.62(68.31)11.34(57.03)4.90(59.80)0.51 | 30.28(92.82)11.57(82.07)22.50(105.07)51.55(74.52)0.26 |
| Physical activity c Sedentary/low, < 600 MET min/weekModerate, 600 to 1200 MET min/weekHigh, ≥ 1200 MET min/weekp-values b | 2.54 (12.46)-0.41 (13.17)0.21 (12.45)0.04 | -4.01 (135.69)10.47 (136.70)14.20 (132.85)0.32 | -18.41(72.83)-20.78(92.79)-13.77(77.32)0.68 | 6.94(62.95)11.38(53.73)9.28(59.18)0.77 | 34.67(89.48)5.55(86.37)18.73(113.26)0.02 |
| Pre-pregnancy BMI cp-values b | 0.020.59 | 0.040.31 | 0.030.42 | 0.060.16 | -0.040.30 |
| Self-income (weekly) c< 999 $1000 $ – 1499 $>1500 $Don’t know/ don’t want to answer p-values b | 0.22 (12.53)2.66 (13.58)0.62 (12.09)2.94 (10.65)0.21 | 7.28 (139.01)1.72 (124.04)4.55 (141.55)9.68 (108.72)0.98 | -16.51(80.53)-13.33(75.60)-34.95(91.17)-17.07(78.27)0.39 | 10.14(62.02)11.20(54.32)7.01(55.10)-7.28(48.02)0.42 | 22.89(98.55)13.59(95.80)25.14(103.74)35.91(106.04)0.65 |
| Gestational diabetes mellitus c NoYes p-values b | 0.86 (12.64)5.34 (11.51)0.09 | 7.13 (137.48)-34.84(122.69)0.14 | -16.49(79.74)-32.90(96.95)0.33 | 9.43(59.30)-8.11(67.96)0.16 | 22.00(98.83)21.66(97.46)0.99 |
| Hypertensive disorder in pregnancy c No Yes p-values b | 1.07 (12.42)0.36 (15.29)0.72 | 2.64 (134.29)49.05 (161.54)0.03 | -18.05(80.86)1.27(60.17)0.12 | 7.99(60.36)20.57(48.10)0.18 | 21.99(99.30)22.79(93.66)0.96 |

a Values are mean (SD) or correlation coefficients (r), b *p-values* from ANOVA or t-test or Pearson’s correlation test. c missing values (area of residence: n= 2, marital status: n=4, educational status: n=19, smoking status: n=4, alcohol intake: n=3, physical activity: n=6, pre-pregnancy BMI: n= 11, self-income: n= 2, gestational diabetes: n= 8, hypertensive disorder in pregnancy: n= 10.

**Supplementary Table 3.** Socio-demographic and lifestyle factors associated with changes in dietary patternsin the crude linear regression model (n= 621)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Predictors**  | **Healthy Eating Index-2015 score**a Crude β (95% CI)  | **Western diets** a Crude β (95% CI)  | **Vegetables and** **grains**a Crude β (95% CI)  | **Traditional** **Vegetables**a Crude β (95% CI)  | **Fruits** a Crude β (95% CI)  |
| women age, years | -0.44 (-0.99, 0.11) | 4.06 (-1.95, 10.07) | 2.73 (-0.37, 5.83) | 1.59 (-1.14, 4.32) | 1.08 (-3.57, 5.73) |
| Area of residence Urban Rural/remote | 0.00-1.64 (-3.26, -0.03) | 0.0013.77 (-3.87, 31.42) | 0.00-8.89 (-18.02, 0.24) | 0.0014.87 (6.81, 22.94) | 0.000.44 (-13.23, 14.11) |
| Marital status Married De facto/separated/divorcedSingle | 0.00-1.18 (-3.34, 0.98)-6.46 (-16.28, 3.35) | 0.004.61 (-19.07, 28.29)-9.01 (-116.69, 98.61) | 0.00-2.06 (-14.15, 10.04)72.68 (17.36,128.00) | 0.008.62 (-2.12, 19.36)25.50 (-23.27, 74.27) | 0.002.61 (-15.61, 20.83)69.87(-13.13,152.86) |
| Educational status Up to year 12 or equivalentTrade/apprenticeship/certificate/diplomaUniversity/higher degree | 0.000.56 (-1.96, 3.08)3.27 (1.09, 5.44) | 0.00-43.89 (-71.04,-16.73)-44.49 (-67.74,-21.23) | 0.00-1.43 (-15.86, 12.99)3.28 (-9.05, 15.61) | 0.00-7.06 (-19.53, 5.40)-11.80 (-22.43,-1.17) | 0.0020.87 (-0.35, 42.09)27.45 (9.40, 45.51) |
| Smoking status Never smokedEx-smokerCurrent smoker | 0.000.47 (-1.76, 2.72)0.47 (-1.62, 2.57) | 0.00-3.88 (-28.38, 20.62)19.57 (-3.31, 42.44) | 0.00-11.73 (-24.36, 0.89)-5.68 (-17.45, 6.10) | 0.000.33 (-10.82, 11.49)2.85 (-7.56, 13.27) | 0.00-26.35 (-45.23,-7.47)-11.82 (-29.51, 5.86) |
| Alcohol intake Non-drinkerRarely drinkerLow risk drinkerRisky drinker | 0.00-3.30 (-6.92, 0.33)-1.37 (-4.73, 1.98)-4.42 (-9.47, 0.64) | 0.005.33 (-34.47, 45.13)-1.94 (-38.68, 34.79)44.77 (-10.86, 100.40) | 0.006.27 (-14.27, 26.81)14.24 (-4.76, 33.23)12.96 (-15.93, 41.85) | 0.00-4.87 (-22.97, 13.23)0.28 (-16.42, 16.99)5.90 (-19.36, 31.16) | 0.00-13.94(-44.69,16.80)2.01 (-26.40, 30.42)16.00 (-26.85, 58.86) |
| Physical activity Sedentary/low, < 600 MET min/weekModerate, 600 to 1200 MET min/weekHigh, ≥ 1200 MET min/week | 0.00-0.33 (-2.40, 1.74)0.49 (-1.34, 2.33) | 0.004.29 (-17.96, 26.53)-2.41 (-22.16, 17.33) | 0.000.20 (-11.41, 11.81)5.39 (-4.86, 15.64) | 0.003.39 (-6.83, 13.62)1.67 (-7.36, 10.69) | 0.00-16.76 (-34.21, 0.68)2.57 (-12.96, 18.11) |
| Pre-pregnancy BMI | -0.05 (-0.21, 0.12) | 2.60 (0.82, 4.38) | -0.13 (-1.07, 0.80) | 1.11 (0.30, 1.93) | -0.90 (-2.29, 0.50) |
| Self-income (weekly) < 999 $1000 $ – 1499 $>1500 $Don’t know/ don’t want to answer  | 0.003.29 (1.33, 5.25)4.26 (1.56, 6.96)2.80 (-0.75, 6.35) | 0.00-20.17 (-41.57, 1.23)-25.97 (-55.25, 3.30)-17.46 (-56.23, 21.31) | 0.007.68 (-3.54, 18.91)-5.13 (-20.50, 10.24)7.60 (-12.75, 27.96) | 0.00-9.14 (-18.96, 0.67)-13.48 (-26.86,-0.10)-26.70 (-44.41,-8.99) | 0.00-2.74 (-19.53, 14.05)17.39 (-5.61, 40.39)15.79 (-14.61, 46.20) |
| Gestational diabetes mellitus NoYes  | 0.002.32 (-1.74, 6.38) | 0.00-31.38 (-75.92, 13.15) | 0.00-8.81 (-31.92, 14.29) | 0.00-18.38 (-38.66, 1.90) | 0.00-1.17 (-35.72, 33.38) |
| Hypertensive disorder in pregnancy No Yes  | 0.00-2.37 (-5.42, 0.68) | 0.0041.83 (8.43, 75.23) | 0.00-1.19 (-18.64, 16.25) | 0.008.51 (-6.75, 23.77) | 0.003.62 (-22.37, 29.61) |

a Crude model was adjusted for dietary patterns before pregnancy.

**Supplementary Table 4.** Factor loadings of food items for the 4 dietary patterns extracted with the use of 101 food items at preconception (Survey 3) and during pregnancy (Survey 5), n= 621 a

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Food items**  | **Factor 1****Western diets** | **Factor 2****Vegetables and grains** | **Factor 3****Traditional vegetables** | **Factor 4****Fruits** |
|  | Survey 3 | Survey 5 | Survey 3 | Survey 5 | Survey 3 | Survey 5 | Survey 3 | Survey 5 |
| **All bran** | 0.00 | -0.01 | 0.09 | 0.09 | -0.05 | 0.01 | 0.07 | -0.01 |
| **Apples**  | -0.11 | 0.05 | 0.19 | 0.30 | 0.08 | 0.01 | 0.27 | 0.20 |
| **Apricots**  | 0.08 | 0.07 | -0.04 | 0.10 | 0.07 | 0.01 | **0.43** | **0.43** |
| **Avocado**  | 0.05 | 0.00 | 0.29 | 0.44 | 0.05 | 0.02 | 0.14 | 0.31 |
| **Bacon**  | **0.42** | **0.27** | -0.09 | -0.19 | -0.12 | -0.02 | 0.09 | 0.07 |
| **Baked beans** | 0.05 | 0.00 | 0.03 | 0.05 | 0.02 | 0.09 | 0.00 | -0.01 |
| **Bananas**  | -0.15 | -0.05 | 0.17 | 0.23 | -0.03 | -0.05 | 0.22 | 0.14 |
| **Bean sprouts** | -0.07 | -0.09 | 0.24 | 0.13 | 0.17 | 0.12 | 0.26 | 0.13 |
| **Beef**  | **0.60** | **0.51** | -0.09 | -0.20 | 0.15 | 0.21 | 0.06 | 0.11 |
| **Beetroot**  | 0.03 | 0.06 | 0.15 | 0.13 | 0.26 | 0.24 | 0.26 | 0.31 |
| **Bran flakes**  | 0.08 | 0.12 | 0.11 | 0.02 | -0.08 | -0.02 | 0.02 | 0.07 |
| **Broccoli**  | -0.11 | -0.13 | 0.10 | 0.03 | **0.49** | **0.41** | 0.02 | 0.01 |
| **Butter**  | 0.12 | 0.07 | 0.01 | 0.15 | 0.13 | 0.12 | -0.01 | 0.03 |
| **Butter margarine blends** | 0.16 | 0.03 | 0.05 | 0.01 | -0.03 | -0.02 | -0.05 | -0.10 |
| **Cabbage**  | 0.14 | 0.22 | 0.16 | 0.10 | **0.45** | **0.37** | 0.20 | 0.15 |
| **Cakes**  | **0.48** | **0.39** | 0.04 | 0.10 | 0.00 | 0.06 | 0.10 | -0.01 |
| **Capsicum**  | -0.13 | -0.09 | **0.41** | **0.39** | 0.00 | -0.05 | 0.06 | 0.15 |
| **Carrots**  | 0.12 | 0.16 | 0.22 | 0.27 | **0.51** | **0.53** | 0.04 | 0.11 |
| **Cauliflower**  | 0.03 | -0.04 | -0.14 | -0.16 | **0.54** | **0.46** | 0.06 | -0.02 |
| **Celery**  | -0.08 | -0.10 | 0.16 | 0.17 | 0.06 | 0.17 | 0.29 | 0.32 |
| **Chicken**  | **0.54** | **0.45** | -0.01 | -0.16 | 0.08 | 0.04 | 0.00 | 0.08 |
| **Chips**  | **0.38** | **0.43** | -0.04 | -0.07 | 0.15 | 0.21 | -0.29 | -0.11 |
| **Chocolate**  | **0.32** | **0.40** | 0.06 | 0.19 | -0.06 | -0.06 | -0.09 | 0.00 |
| **Cornflakes**  | 0.11 | 0.17 | -0.02 | -0.07 | -0.01 | 0.04 | -0.01 | 0.01 |
| **Crackers**  | 0.29 | 0.22 | 0.27 | 0.22 | -0.12 | -0.04 | 0.07 | 0.03 |
| **Cream cheese** | 0.04 | 0.16 | 0.11 | 0.21 | 0.05 | 0.07 | 0.02 | 0.01 |
| **Crisps**  | **0.48** | **0.37** | 0.06 | 0.01 | 0.02 | 0.00 | -0.11 | 0.02 |
| **Cucumber**  | -0.15 | -0.17 | 0.23 | 0.26 | 0.02 | -0.02 | 0.26 | 0.32 |
| **Eggs**  | 0.16 | 0.11 | 0.12 | 0.22 | 0.10 | 0.03 | 0.13 | -0.01 |
| **Firm cheese** | 0.27 | 0.16 | 0.02 | -0.03 | -0.03 | 0.11 | -0.06 | 0.03 |
| **Fish**  | 0.18 | 0.28 | 0.26 | 0.08 | 0.23 | 0.09 | 0.26 | 0.25 |
| **Flavoured milk drink** | 0.20 | 0.12 | -0.06 | -0.07 | -0.03 | 0.09 | -0.08 | -0.10 |
| **Fortified wines** | 0.03 | 0.09 | 0.14 | 0.09 | -0.07 | -0.10 | 0.07 | 0.00 |
| **Fried fish** | **0.35** | **0.41** | 0.12 | -0.05 | 0.10 | 0.10 | 0.02 | -0.02 |
| **Fruit juice** | 0.17 | 0.28 | 0.16 | 0.08 | 0.03 | 0.09 | -0.01 | -0.06 |
| **Full cream milk** | 0.19 | 0.20 | -0.14 | -0.16 | 0.20 | 0.31 | -0.19 | -0.11 |
| **Garlic**  | -0.06 | -0.04 | **0.51** | **0.42** | 0.07 | 0.00 | -0.06 | 0.04 |
| **Green beans** | 0.00 | 0.06 | -0.11 | -0.02 | **0.48** | **0.39** | -0.01 | 0.10 |
| **Ham**  | 0.28 | 0.21 | -0.07 | -0.10 | -0.05 | -0.16 | 0.05 | 0.05 |
| **Hamburger**  | **0.33** | **0.30** | -0.08 | -0.21 | -0.07 | -0.03 | -0.15 | -0.04 |
| **Hard cheese** | 0.04 | 0.04 | 0.27 | 0.20 | -0.07 | -0.15 | 0.01 | 0.03 |
| **High fibre white bread** | 0.17 | 0.15 | -0.05 | -0.19 | 0.04 | 0.05 | -0.02 | 0.07 |
| **Ice cream** | **0.32** | **0.34** | 0.07 | 0.02 | 0.14 | 0.07 | 0.04 | 0.02 |
| **Jam**  | 0.19 | 0.23 | 0.21 | 0.16 | 0.00 | 0.02 | 0.07 | 0.04 |
| **Lamb**  | **0.42** | **0.43** | -0.13 | -0.20 | 0.08 | 0.14 | 0.04 | 0.31 |
| **Lettuce**  | -0.17 | -0.19 | 0.29 | 0.30 | 0.06 | -0.08 | 0.17 | 0.23 |
| **Low fat cheese** | -0.06 | -0.03 | 0.01 | 0.06 | -0.10 | -0.09 | 0.17 | 0.09 |
| **Mango**  | -0.01 | 0.05 | 0.04 | 0.02 | 0.02 | -0.06 | **0.35** | **0.41** |
| **Margarine**  | 0.11 | 0.05 | -0.17 | -0.24 | -0.01 | 0.00 | -0.07 | 0.06 |
| **Meat pies** | **0.41** | **0.31** | 0.02 | -0.10 | -0.05 | -0.01 | -0.02 | -0.04 |
| **Multi grain bread** | -0.07 | 0.04 | 0.19 | 0.18 | -0.10 | -0.10 | 0.06 | 0.10 |
| **Melon**  | -0.03 | 0.03 | -0.12 | -0.07 | -0.01 | -0.03 | **0.49** | **0.38** |
| **Monounsaturated margarine** | -0.03 | 0.11 | -0.07 | 0.03 | -0.01 | -0.03 | 0.00 | -0.04 |
| **Muesli**  | -0.14 | -0.07 | 0.23 | 0.30 | 0.02 | -0.11 | 0.07 | 0.08 |
| **Mushrooms**  | 0.04 | 0.16 | **0.62** | **0.51** | 0.19 | 0.18 | 0.02 | 0.04 |
| **Nuts**  | 0.01 | 0.18 | 0.28 | 0.40 | 0.05 | -0.07 | 0.17 | 0.21 |
| **Onion**  | 0.07 | 0.25 | **0.59** | **0.47** | 0.26 | 0.18 | -0.13 | 0.02 |
| **Oranges**  | -0.05 | 0.00 | -0.01 | 0.10 | 0.01 | -0.09 | 0.15 | 0.22 |
| **Other beans b** | -0.17 | -0.04 | **0.53** | **0.56** | 0.20 | 0.04 | 0.08 | 0.14 |
| **Pasta**  | **0.34** | **0.48** | **0.35** | **0.21** | -0.03 | 0.00 | -0.14 | 0.02 |
| **Peaches**  | 0.06 | 0.07 | 0.02 | 0.04 | 0.01 | 0.08 | **0.44** | **0.56** |
| **Peanut butter** | 0.13 | 0.27 | 0.19 | 0.20 | -0.01 | -0.02 | -0.01 | 0.04 |
| **Pears**  | -0.03 | -0.11 | 0.05 | 0.18 | 0.07 | 0.03 | **0.36** | 0.29 |
| **Peas**  | 0.22 | 0.22 | -0.08 | -0.03 | **0.55** | **0.53** | -0.16 | -0.06 |
| **Pineapple**  | 0.15 | 0.16 | -0.04 | 0.07 | 0.02 | 0.08 | **0.43** | **0.38** |
| **Pizza**  | **0.38** | **0.44** | 0.16 | 0.09 | 0.08 | 0.03 | -0.12 | 0.01 |
| **Polyunsaturated margarine** | 0.06 | 0.08 | 0.08 | -0.01 | -0.08 | -0.04 | -0.05 | -0.09 |
| **Pork**  | **0.43** | **0.34** | -0.03 | -0.18 | -0.02 | 0.14 | 0.15 | 0.30 |
| **Porridge**  | -0.02 | 0.09 | 0.20 | 0.13 | 0.11 | 0.13 | 0.02 | 0.17 |
| **Potatoes**  | 0.30 | 0.32 | -0.05 | -0.07 | **0.40** | **0.47** | -0.20 | -0.08 |
| **Pumpkin**  | 0.18 | 0.14 | 0.05 | 0.10 | **0.55** | **0.48** | -0.04 | -0.04 |
| **Reduced fat milk** | 0.04 | -0.06 | -0.03 | 0.03 | -0.17 | -0.17 | -0.05 | -0.02 |
| **Rice**  | 0.16 | 0.28 | **0.38** | **0.31** | 0.04 | -0.02 | 0.04 | 0.06 |
| **Ricotta or cottage cheese** | 0.05 | 0.00 | 0.21 | 0.19 | -0.07 | -0.05 | 0.10 | 0.06 |
| **Rye bread** | -0.10 | -0.05 | 0.08 | 0.15 | 0.07 | -0.15 | 0.16 | 0.01 |
| **Salami**  | **0.41** | **0.32** | -0.02 | -0.10 | 0.08 | -0.03 | 0.01 | 0.14 |
| **Sausages**  | **0.49** | **0.53** | 0.04 | -0.13 | 0.11 | 0.17 | -0.02 | -0.02 |
| **Skim milk** | -0.05 | -0.06 | 0.02 | 0.07 | -0.03 | -0.09 | 0.23 | 0.10 |
| **Soft cheese** | 0.13 | 0.10 | 0.17 | 0.12 | -0.06 | -0.06 | 0.03 | -0.08 |
| **Soya milk** | -0.18 | -0.09 | 0.28 | 0.20 | 0.15 | -0.01 | 0.04 | 0.07 |
| **Spinach**  | 0.06 | 0.05 | **0.35** | **0.41** | **0.41** | **0.28** | 0.18 | 0.23 |
| **Spirits**  | 0.14 | 0.15 | -0.01 | 0.00 | 0.05 | 0.03 | -0.04 | -0.09 |
| **Strawberries**  | 0.08 | 0.15 | 0.04 | 0.06 | 0.07 | -0.07 | **0.40** | **0.40** |
| **Sugar**  | 0.19 | 0.08 | -0.18 | -0.18 | 0.08 | 0.26 | -0.16 | -0.01 |
| **Sweet biscuits** | **0.32** | **0.34** | 0.07 | 0.09 | -0.05 | 0.05 | 0.06 | -0.03 |
| **Tinned fish** | 0.16 | 0.17 | 0.21 | 0.19 | 0.09 | -0.09 | 0.25 | 0.20 |
| **Tinned fruit** | 0.09 | 0.19 | 0.06 | 0.03 | 0.04 | 0.15 | 0.13 | 0.26 |
| **Tofu**  | -0.20 | -0.11 | **0.44** | **0.37** | 0.08 | 0.01 | 0.06 | 0.01 |
| **Tomatoes**  | -0.09 | -0.03 | **0.37** | **0.27** | -0.05 | -0.04 | -0.04 | 0.16 |
| **Tomato sauce** | 0.24 | 0.31 | 0.25 | 0.09 | 0.16 | 0.11 | -0.17 | 0.01 |
| **Veal**  | 0.19 | 0.21 | -0.02 | -0.09 | 0.08 | -0.02 | 0.09 | 0.18 |
| **Vegemite**  | 0.29 | 0.36 | 0.13 | 0.03 | 0.03 | 0.11 | 0.03 | 0.03 |
| **Weet-Bix** | 0.04 | 0.11 | 0.02 | -0.01 | 0.12 | 0.19 | 0.03 | 0.01 |
| **White bread** | 0.26 | 0.08 | -0.23 | -0.31 | 0.05 | 0.12 | -0.15 | -0.14 |
| **Wholemeal bread** | -0.09 | 0.03 | 0.10 | 0.14 | 0.01 | 0.02 | 0.05 | -0.03 |
| **Yoghurt**  | 0.05 | 0.01 | 0.17 | 0.28 | -0.10 | -0.06 | **0.35** | **0.25** |
| **Zucchini**  | -0.04 | 0.10 | **0.50** | **0.44** | **0.39** | **0.36** | 0.07 | 0.02 |
| **Red wine** | 0.01 | 0.04 | 0.29 | 0.28 | -0.18 | -0.22 | -0.01 | -0.08 |
| **White wine** | 0.07 | 0.07 | 0.17 | 0.10 | -0.14 | -0.22 | 0.06 | -0.02 |
| **Light beer** | 0.04 | 0.02 | 0.01 | -0.01 | -0.08 | -0.07 | -0.04 | -0.04 |
| **Heavy beer** | 0.11 | 0.08 | 0.26 | 0.19 | -0.08 | -0.07 | -0.03 | -0.13 |

a Values are correlation coefficients between each food item and the dietary pattern derived from factor analysis. Factor loadings above 0.30 are shown in bold. b Other beans: chickpeas, lentils, etc.

**Supplementary Table 5.** Change of weight and energy intake from preconception to during pregnancy.

|  |  |  |  |
| --- | --- | --- | --- |
| Variables  | Time points(n= 621) | Mean (SD) | Spearman’s correlation coefficient (r)  |
| Weight (kg) | Before pregnancyDuring pregnancyMean difference  | 65.79 (13.32)68.48 (14.07)2.69 (7.04) | 0.87 |
| *p-value b*  | < 0.0001 | < 0.0001 |
| Total energy intake (KJ/day) | Before pregnancy During pregnancyMean difference | 6487.64 (2259.48)7135.74 (2160.63)648.09 (2270.39) | 0.46 |
| *p-value b* | < 0.0001 | < 0.0001 |

a Values are mean (SD) or correlation coefficients (r), b *p-values* from the paired t-test, Spearman’s correlation.