Supplementary Table 1: Mean sun hours available per day during the whole of pregnancy and each trimester of all singleton pregnancies in Scotland 2000-2010

|  |  |
| --- | --- |
|    | Sun exposure, mean hrs (SD)   |
| Pregnancy   | 3.71 (0.61)   |
| 1st trimester   | 3.77 (1.51)   |
| 2nd trimester   | 3.69 (1.52)   |
| 3rd trimester   | 3.53 (1.67)   |

SD standard deviation

Supplementary Table 2

Association between mean quartile of sun hours available per day in trimester 1, trimester 2 and the combined average exposure over trimester 1 and 2, and preterm birth in Scotland 2000-2010 using logistic regressioncontrolled for within mother effects

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Available sun exposure   | Preterm birthsn(%)   | Univariable  OR (95% CI)   | p   | Multivariable, OR (95% CI)   **Model 1**   | p   | Multivariable OR (95% CI)   **Model 2**   | p   |
| Trimester 1  Q1 (lowest)   Q2  Q3  Q4 (highest)   |   8150 (6.2)  7773 (5.9)   7597 (5.7)  7412 (5.6)   |   Ref 0.95 (0.92, 0.98) 0.93(0.89, 0.96) 0.90 (0.87, 0.94)  |     <0.01<0.01<0.01   |   Ref  0.94 (0.91, 0.98) 0.92 (0.89, 0.95) 0.91 (0.87, 0.94)  |     <0.01  <0.01  <0.01   |   Ref  0.98 (0.94, 1.03) 0.96 (0.91, 1.02) 0.94 (0.88, 0.99)  |     0.49  0.18  <0.01   |
| Trimester 2  Q1 (lowest)  Q2  Q3  Q4 (highest)   |   7731 (5.9)  7726 (5.8)  7698 (5.9)  7776 (5.9)   |   Ref  1.01 (0.97, 1.04) 1.00 (0.97, 1.04) 1.02 (0.99, 1.06)  |     0.72  0.95  0.19   |   Ref  0.99 (0.95, 1.02) 0.98 (0.94, 1.01) 1.03 (0.99, 1.07)  |     0.47  0.25  0.11   |   Ref  0.98 (0.93, 1.02) 0.97 (0.91, 1.03) 1.04 (0.97, 1.12)  |     0.31  0.29  0.22   |
| Average trimester 1+2 Q1 (lowest)  Q2  Q3  Q4 (highest)   |          |       Ref  1.01 (0.98, 1.04) 0.95 (0.91, 0.98) 0.96 (0.92, 0.99)  |         0.47<0.010.01   |       Ref  1.02 (0.98, 1.05) 0.95 (0.92, 0.99) 0.96 (0.93, 1.0)  |         0.34  <0.01  0.05  |       Ref  1.01 (0.98, 1.05) 0.96 (0.91, 1.02) 0.98 (0.93, 1.05)  |         0.47  0.18  0.63   |

Q= Quartile

Model 1 adjusted for alternate trimester exposure, maternal age, smoking status, SIMD category and parity; for exposure ‘average trimester 1+2’ adjusted for maternal age, smoking status, SIMD category and parity

Model 2 adjusted for alternate trimester exposure, season of conception, maternal age, smoking status, SIMD and parity; for exposure ‘average trimester 1+2’ adjusted for season of conception, maternal age, smoking, SIMD category and parity

Supplementary Table 3

Association between mean quartile of sun hours available per day in trimester 1, trimester 2 and the combined average exposure over trimester 1 and 2, and gestational length in weeks in Scotland 2000-2010 using linear regression controlled for within mother effects

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Available sun exposure   | Preterm birthsn(%)   | Univariable  β-Coef  (95% CI)   | p   | Multivariable,  β-Coef (95% CI)   **Model 1**   | p   |
| Trimester 1  Q1 (lowest)   Q2  Q3  Q4 (highest)   |   8150 (6.2)  7773 (5.9)   7597 (5.7)  7412 (5.6)   |   Ref 0.03 (0.01, 0.04) 0.05 (0.04, 0.07) 0.07 (0.05, 0.08)  |     <0.01  <0.01  <0.01   |   Ref  0.02 (-0.004, 0.04) 0.04 (0.01, 0.06) 0.04 (0.02, 0.07)  |     0.12  <0.01  <0.01   |
| Trimester 2  Q1 (lowest)  Q2  Q3  Q4 (highest)   |   7731 (5.9)  7726 (5.8)  7698 (5.9)  7776 (5.9)   |   Ref  0.00 (-0.01, 0.01) -0.003(-0.02, 0.01) -0.01(-0.03, -0.00)  |     0.97  0.71 0.05   |   Ref  0.02 (0.001, 0.04) 0.02 (-0.003, 0.05) -0.01(-0.04, 0.02)  |     0.04 0.08  0.67   |
| Average trimester 1+2 Q1 (lowest)  Q2  Q3  Q4 (highest)   |          |       Ref  0.01 (-0.01, 0.02) 0.04 (0.02, 0.05) 0.03 (0.02, 0.05)  |         0.45  <0.01  <0.01   |       Ref 0.01 (-0.01,0.02) 0.03 (0.00, 0.05) 0.02 (-0.01,0.05)  |         0.34 0.02  0.20   |

Q= Quartile

Model 1 adjusted for alternate trimester exposure and season of conception; for exposure ‘average trimester 1+2’ adjusted for season of conception