**Supplementary Material**

**Supplementary Table 1.** Model fit, standardized regression coefficients and standard errors of fixed and random effects as predictors of development of depressive and anxiety symptoms with never and ever users, and never, early and late users of oral contraceptives modeled by OC onset.

| Parameters                  | Estimate | SE  | χ²   | df | AIC     | BIC     |
|-----------------------------|----------|-----|------|----|---------|---------|
| **Depression [never/ever]** |          |     |      |    |         |         |
| Intercept                   | 39.85    | 1.73| 502.77 | 6  | 4941.4  | 4961.8  |
| Time1                       | 0.68     | 0.44|       |    |         |         |
| Time2                       | 2.30**   | 0.56|       |    |         |         |
| OC use                      | 1.05     | 2.38|       |    |         |         |
| OC use*time1                | -0.52    | 0.63|       |    |         |         |
| OC use*time2                | -2.18*   | 0.70|       |    |         |         |
| **Depression [never/early/late]** |         |     |      |    |         |         |
| Intercept                   | 39.84    | 1.73| 501.66 | 6  | 4931.5  | 4951.9  |
| Time1                       | 0.68     | 0.44|       |    |         |         |
| Time2                       | 2.29     | 0.56|       |    |         |         |
| OC use early                | 2.26     | 2.90|       |    |         |         |
| OC use late                 | -0.28    | 2.91|       |    |         |         |
| OC use early* time1         | 0.39     | 1.07|       |    |         |         |
| OC use late* time1          | -0.88    | 0.69|       |    |         |         |
| OC use early*time2          | -2.33*   | 0.73|       |    |         |         |
| OC use late* time2          | -1.75    | 1.36|       |    |         |         |
| **Anxiety [never/ever]**    |          |     |      |    |         |         |
| Intercept                   | 52.15    | 1.58| 479.56 | 6  | 4763.5  | 4783.9  |
| Time1                       | -0.03    | 0.49|       |    |         |         |
| Time2                       | 1.34     | 0.60|       |    |         |         |
| OC use                      | 0.89     | 2.20|       |    |         |         |
| OC use*time1                | 0.28     | 0.70|       |    |         |         |
| OC use*time2                | -1.77*   | 0.81|       |    |         |         |
| **Anxiety [never/early/late]** |         |     |      |    |         |         |
| Intercept                   | 52.15    | 1.59| 479.58 | 6  | 4753.8  | 4774.2  |
| Time1                       | -0.03    | 0.49|       |    |         |         |
| Time2                       | 1.34     | 0.60|       |    |         |         |
| OC use early                | 0.32     | 2.69|       |    |         |         |
| OC use late                 | 1.47     | 2.71|       |    |         |         |
| OC use early* time1         | 1.05     | 1.15|       |    |         |         |
| OC use late* time2          | 0.19     | 0.78|       |    |         |         |
| OC use early*time1          | -1.73    | 0.86|       |    |         |         |
| OC use late* time2          | -2.11    | 1.41|       |    |         |         |

*p < 0.05, **p <0.001; Time1 refers to measures predating OC start, Time2 to measures after OC start; SE: standard error; df: degrees of freedom. AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion.
Supplementary Figure 1. Oral Contraceptive (OC) use, age of onset, and modeled anxiety and depression trajectories based on OC onset. Growth curve models for the depressive and anxiety symptoms for never and ever users, and never, early (<15 years), and late (≥15 years) users of oral contraceptives (OCs); pill wave refers to measurements taken before (-1,0) and after (>0) OC onset.
Supplementary Table 2. Correlations between study sample characteristics and depression and anxiety symptoms.

| Characteristic                  | Depression W6 |       | Anxiety W6 |       |
|--------------------------------|---------------|-------|------------|-------|
|                                | Pearson’s r   | P     | Pearson’s r | P     |
| Age, mean (SD)                 | -0.13         | 0.080 | -0.11      | 0.140 |
| Age at menarche, mean (SD)     | 0.08          | 0.300 | 0.07       | 0.401 |
| Age at sexual debut, mean (SD) | -0.17         | 0.096 | -0.05      | 0.627 |
| Sexual debut, N(%)             | -0.08         | 0.312 | -0.08      | 0.286 |
| Romantic Relationships, N(%)   | -0.09         | 0.276 | -0.10      | 0.189 |
| Education, mean (SD)           | 0.05          | 0.562 | 0.09       | 0.253 |
| Low Family SES, N(%)           | 0.05          | 0.468 | -0.02      | 0.781 |
| Religious, N(%)                | -0.01         | 0.856 | 0.02       | 0.821 |
| Smoking history, N(%)          | -0.01         | 0.902 | -0.02      | 0.839 |
| Alcohol Use, mean (SD)         | -0.16         | 0.030 | -0.16      | 0.038 |
| Drug Use, N(%)                 | 0.09          | 0.232 | 0.03       | 0.659 |
| Childhood Trauma, mean (SD)    | 0.43          | < 0.001 | 0.31      | 0.012 |
| Neuroticisma, mean (SD)        | -0.28         | < 0.001 | -0.33   | < 0.001 |

* Scores reflect emotional stability with lower scores meaning higher levels of neuroticism.
**Supplementary Table 3.** Correlations between anxiety and depressive symptoms for each wave.

| Wave       | Pearson’s r | P     |
|------------|-------------|-------|
| Age 13 (W1) | 0.67        | < 0.001 |
| Age 14 (W2) | 0.72        | < 0.001 |
| Age 15 (W3) | 0.77        | < 0.001 |
| Age 16 (W4) | 0.78        | < 0.001 |
| Age 17 (W5) | 0.79        | < 0.001 |
| Age 18 (W6) | 0.81        | < 0.001 |
| Age 20 (W7) | 0.79        | < 0.001 |
| Age 22 (W8) | 0.83        | < 0.001 |
| Age 24 (W9) | 0.73        | < 0.001 |
Supplementary Table 4. Model fit, standardized regression coefficients and standard errors of fixed and random effects as predictors of development of depressive and anxiety symptoms with never, early and late users of oral contraceptives.

| Parameters                  |  |  |  |  |  |  |
|-----------------------------|----------------|
| **Depression - crude**      | | | | | | |
| Intercept                   | 38.12 | 1.81 | 721.83 | 6 | 6880.9 | 6901.3 |
| Age1                        | 0.23  | 0.45 |  |  |  |  |
| Age2                        | 1.10  | 0.25 |  |  |  |  |
| OC use early                | 4.60  | 3.09 |  |  |  |  |
| OC use late                 | 2.19  | 2.79 |  |  |  |  |
| OC use early*age1           | 0.83  | 0.80 |  |  |  |  |
| OC use late*age1            | -0.56 | 0.71 |  |  |  |  |
| OC use early*age2           | -1.77**| 0.54 |  |  |  |  |
| OC use late*age2            | -1.10*| 0.40 |  |  |  |  |
| **Depression - adjusted**   | | | | | | |
| Intercept                   | 35.02 | 4.22 | 619.86 | 6 | 6204.0 | 6223.5 |
| Age1                        | 0.29  | 0.48 |  |  |  |  |
| Age2                        | 1.16  | 0.26 |  |  |  |  |
| OC use early                | 6.54  | 3.61 |  |  |  |  |
| OC use late                 | 4.45  | 3.31 |  |  |  |  |
| OC use early*age1           | 0.65  | 0.86 |  |  |  |  |
| OC use late*age1            | -0.35 | 0.76 |  |  |  |  |
| OC use early*age2           | -1.80**| 0.54 |  |  |  |  |
| OC use late*age2            | -1.07*| 0.41 |  |  |  |  |
| **Anxiety - crude**         | | | | | | |
| Intercept                   | 38.12 | 1.81 | 721.83 | 6 | 6880.9 | 6901.3 |
| Age1                        | 0.23  | 0.45 |  |  |  |  |
| Age2                        | 1.10  | 0.25 |  |  |  |  |
| OC use early                | 4.60  | 3.09 |  |  |  |  |
| OC use late                 | 2.19  | 2.79 |  |  |  |  |
| OC use early*age1           | 0.83  | 0.80 |  |  |  |  |
| OC use late*age1            | -0.56 | 0.71 |  |  |  |  |
| OC use early*age2           | -1.77*| 0.54 |  |  |  |  |
| OC use late*age2            | -1.10**| 0.40 |  |  |  |  |
| **Anxiety - adjusted**      | | | | | | |
| Intercept                   | 55.54 | 4.04 | 581.86 | 6 | 5734.5 | 5753.9 |
| Age1                        | -0.58 | 0.52 |  |  |  |  |
| Age2                        | 0.58  | 0.24 |  |  |  |  |
| OC use early                | 2.31  | 3.29 |  |  |  |  |
| OC use late                 | 2.65  | 3.02 |  |  |  |  |
| OC use early*age1           | 1.41  | 0.96 |  |  |  |  |
| OC use late*age1            | -0.14 | 0.82 |  |  |  |  |
| OC use early*age2           | -1.08*| 0.51 |  |  |  |  |
| OC use late*age2            | -0.41 | 0.40 |  |  |  |  |

*p < 0.05, **p < 0.001; Adjusted models are corrected for romantic relationships, sexual debut, educational level, religion, smoking history, alcohol use and drug use; SE: standard error; df: degrees of freedom. AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion.
Supplementary Table 5. Comparison of standardized regression coefficients and standard errors of fixed and random effects as predictors of development of depressive and anxiety symptoms using waves 1-9 or waves 1-6.

| Parameters                | Wave 1-9 | Wave 1-6 |
|---------------------------|----------|----------|
|                           | Estimate | SE       | Estimate | SE       |
| **Depression - adjusted** |          |          |          |          |
| Intercept                 | 39.09    | 3.68     | 40.18    | 3.83     |
| Age1                      | 0.27     | 0.49     | 0.27     | 0.54     |
| Age2                      | 1.20*    | 0.26     | 1.26     | 0.74     |
| OC use                    | 4.54     | 2.56     | 4.81     | 2.69     |
| OC use*age1               | -0.09    | 0.61     | 0.06     | 0.67     |
| OC use*age2               | -1.30**  | 0.34     | -1.95*   | 0.91     |
| Romantic Relationships    | -4.23    | 2.53     | -4.56    | 2.63     |
| Sexual Debut              | -0.06    | 2.32     | 0.29     | 2.40     |
| Educational Level         | 0.51     | 0.34     | 0.44     | 0.35     |
| Religion                  | -1.48    | 1.67     | -1.73    | 1.72     |
| Alcohol Use               | -3.06*   | 1.05     | -3.34*   | 1.09     |
| Smoking                   | 4.20*    | 1.85     | 3.79*    | 1.92     |
| Drug Use                  | 5.18*    | 2.05     | 5.34*    | 2.12     |
| **Anxiety - adjusted**    |          |          |          |          |
| Intercept                 | 55.11    | 3.42     | 55.86    | 3.51     |
| Age1                      | -0.60    | 0.53     | -0.54    | 0.54     |
| Age2                      | 0.59     | 0.24     | 0.39     | 0.66     |
| OC use                    | 2.69     | 2.32     | 3.04     | 2.42     |
| OC use*age1               | 0.52     | 0.68     | 0.44     | 0.69     |
| OC use*age2               | -0.74*   | 0.32     | -0.65    | 0.82     |
| Romantic Relationships    | -4.66    | 2.38     | -5.50*   | 2.44     |
| Sexual Debut              | -0.05    | 2.20     | -0.16    | 2.25     |
| Educational Level         | 0.21     | 0.32     | 0.27     | 0.33     |
| Religion                  | -0.72    | 1.58     | -0.69    | 1.61     |
| Alcohol Use               | -3.10*   | 0.99     | -3.51**  | 1.00     |
| Smoking                   | 2.39     | 1.75     | 2.64     | 1.79     |
| Drug Use                  | 5.93*    | 1.94     | 5.47*    | 1.98     |

*p < 0.05, **p < 0.001; Adjusted models are corrected for educational level, religion, smoking history, alcohol use and drug use; SE: standard error; df: degrees of freedom. AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion.