

## Supplemental Material

Serum Concentrations of Polychlorinated Biphenyls (PCBs) in Relation to *in Vitro* Fertilization (IVF)

Outcomes

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Supplemental Material, Table 1. Adjusted odds ratios (95% confidence intervals)<sup>a</sup> for IVF/ICSI failures in relation to lipid-standardized serum PCB quartiles among cycles with an embryo transfer<sup>b</sup>.

| Exposure Quartiles  | Failed Implantation | Chemical Pregnancy | Spontaneous Abortion |
|---------------------|---------------------|--------------------|----------------------|
| <b>PCB 118</b>      |                     |                    |                      |
| Q1                  | Referent            | Referent           | Referent             |
| Q2                  | 1.43 (0.88, 2.32)   | 0.91 (0.55, 1.52)  | 2.03 (1.09, 3.79)    |
| Q3                  | 1.83 (1.11, 3.00)   | 0.89 (0.53, 1.51)  | 2.00 (1.03, 3.87)    |
| Q4                  | 1.42 (0.86, 2.33)   | 1.06 (0.64, 1.76)  | 1.57 (0.81, 3.08)    |
| p for trend         | 0.04                | 0.86               | 0.17                 |
| <b>PCB 138</b>      |                     |                    |                      |
| Q1                  | Referent            | Referent           | Referent             |
| Q2                  | 1.12 (0.69, 1.81)   | 0.93 (0.56, 1.56)  | 1.04 (0.55, 1.96)    |
| Q3                  | 1.45 (0.87, 2.40)   | 1.11 (0.66, 1.88)  | 1.62 (0.85, 3.05)    |
| Q4                  | 1.25 (0.75, 2.07)   | 0.96 (0.56, 1.65)  | 1.25 (0.65, 2.39)    |
| p for trend         | 0.13                | 0.96               | 0.30                 |
| <b>PCB 153</b>      |                     |                    |                      |
| Q1                  | Referent            | Referent           | Referent             |
| Q2                  | 1.69 (1.02, 2.79)   | 1.14 (0.68, 1.92)  | 0.77 (0.41, 1.45)    |
| Q3                  | 1.52 (0.89, 2.60)   | 1.08 (0.63, 1.84)  | 0.98 (0.52, 1.84)    |
| Q4                  | 2.03 (1.19, 3.46)   | 0.99 (0.56, 1.75)  | 1.01 (0.52, 1.95)    |
| p for trend         | 0.005               | 0.98               | 0.80                 |
| <b>Group 1 PCBs</b> |                     |                    |                      |
| Q1                  | Referent            | Referent           | Referent             |
| Q2                  | 1.06 (0.67, 1.69)   | 1.16 (0.68, 1.95)  | 1.26 (0.70, 2.30)    |
| Q3                  | 1.17 (0.72, 1.89)   | 1.17 (0.69, 1.99)  | 1.32 (0.70, 2.40)    |
| Q4                  | 1.28 (0.79, 1.07)   | 1.15 (0.66, 2.01)  | 0.84 (0.43, 1.63)    |
| p for trend         | 0.15                | 0.60               | 0.75                 |
| <b>Group 2 PCBs</b> |                     |                    |                      |
| Q1                  | Referent            | Referent           | Referent             |
| Q2                  | 1.07 (0.65, 1.74)   | 0.86 (0.51, 1.45)  | 1.36 (0.73, 2.53)    |
| Q3                  | 1.42 (0.85, 2.35)   | 1.22 (0.72, 2.08)  | 1.52 (0.78, 2.95)    |
| Q4                  | 1.27 (0.76, 1.10)   | 0.90 (0.52, 1.57)  | 1.23 (0.63, 2.40)    |
| p for trend         | 0.11                | 0.93               | 0.50                 |

Supplemental Material, Table 1 (cont.)

| Exposure<br>Quartiles | Failed Implantation | Chemical Pregnancy | Spontaneous Abortion |
|-----------------------|---------------------|--------------------|----------------------|
| Group 3 PCBs          |                     |                    |                      |
| Q1                    | Referent            | Referent           | Referent             |
| Q2                    | 1.40 (0.85, 2.28)   | 1.24 (0.73, 2.11)  | 0.90 (0.48, 1.68)    |
| Q3                    | 1.40 (0.83, 2.37)   | 1.73 (1.01, 2.97)  | 1.02 (0.53, 1.98)    |
| Q4                    | 1.61 (0.96, 2.71)   | 0.92 (0.51, 1.66)  | 1.05 (0.56, 1.99)    |
| p for trend           | 0.04                | 0.83               | 0.78                 |
| $\Sigma$ PCB          |                     |                    |                      |
| Q1                    | Referent            | Referent           | Referent             |
| Q2                    | 1.49 (0.90, 2.47)   | 0.94 (0.55, 1.60)  | 0.79 (0.42, 1.48)    |
| Q3                    | 1.79 (1.08, 2.98)   | 1.35 (0.79, 2.30)  | 1.25 (0.65, 2.40)    |
| Q4                    | 1.51 (0.89, 2.55)   | 0.85 (0.49, 1.50)  | 0.93 (0.49, 1.78)    |
| p for trend           | 0.04                | 0.93               | 0.84                 |

<sup>a</sup>Joint models for multiple outcomes and multiple cycles per woman were used. Models adjusted for study site, study phase, race/ethnicity, previous livebirth, maternal age, BMI, smoking status, ampules of gonadotropins, protocol, ICSI, number of embryos transferred, and primary infertility diagnosis.

<sup>b</sup>There were 827 cycles with serum samples analyzed for PCB concentrations. However, due to missing covariates, only 774 cycles from 720 women contributed to the multivariate analysis. Missing ethnicity, infertility diagnosis, and previous live birth were recoded as a separate category so that cycles that were missing this information were in the multivariate models. If a cycle was missing any other covariate, that cycle was dropped from the multivariate analysis. Specifically, 13 cycles were missing lipids, 2 cycles were missing amps of gonadotropins, 32 cycles were missing number of embryos transferred, and 6 cycles were missing BMI