Human Reproduction, 2018
doi:10.1093/humrep/dey374

human reproduction

SUPPLEMENTARY DATA

SAS Code

```
/* First Cycle Only Models */
        * logistic regression;
        proc genmod data=firstIVF descending;
            class age_quart(ref='0' param=ref) infdx1 (ref='3' param=ref);
            model livebirth = age_quart bmi infdx1 eversmk/ dist=binomial link=logit;
            run;
        * log binomial regression;
        proc genmod data=firstIVF descending;
            class age_quart(ref='0' param=ref) infdx1(ref='3' param=ref);
            model livebirth =age_quart bmi infdx1 eversmk/ dist=binomial link=log;
            run;
/* Multiple Cycle Models */
        * Mixed Effects Model: The Modified Poisson Approach;
        proc glimmix data=IVF;
            class idnum age_quart(ref='0') infdx1(ref='3');
            model livebirth= age_quart bmi infdx1 eversmk/ link=log
            dist=poisson solution cl; *Note: to fit the log binomial
            model, simply specify dist=binomial instead of dist=poisson;
            random intercept / subject=idnum type=un;
            lsmeans age_quart / cl; *the lsmeans statement requests the
            probabilities of live birth for each quartile of age, at the
            average value of all covariates;
            run;
        * Unweighted GEE, Log Binomial;
        proc genmod data=IVF descending;
            class idnum age_quart(ref='0' param=ref) infdx1(ref='3'
            param=ref);
            model livebirth= age_quart bmi infdx1 eversmk/ dist=binomial
            link=log;
            repeated subject=idnum/ type=un corrw;
            run;
        * GEE Models - Weighted, Log Binomial;
        proc genmod data=IVF descending;
            class idnum age_quart(ref='0' param=ref) infdx1(ref='3'
            param=ref);
            model livebirth= age_quart bmi infdx1 eversmk/ dist=binomial
            link=log;
            repeated subject=idnum/ type=un;
            weight w;
            run;
/* Obtaining the Working Correlation Matrix */
        * Correlation Matrix for the Unadjusted, Unweighted GEE, Unstructured;
        proc genmod data=IVF descending;
            class idnum age_quart(ref='0' param=ref);
            model livebirth= age_quart/ dist=binomial link=log;
            repeated subject=idnum/ type=un corrw;
            run; *corrw in the repeated statement requests the working
            correlation matrix;
        * Correlation Matrix for the Unadjusted, Unweighted GEE, Compound Symmetry;
        proc genmod data=IVF descending;
            class idnum age_quart(ref='0' param=ref);
            model livebirth= age_quart/ dist=binomial link=log;
            repeated subject=idnum/ type=cs corrw;
            run;
```