**S1 Text, Additional analyses**

## Statistical Methods

Statistical tests were performed in R v3.0.2 [1]. Due to the repeated measures design, linear mixed effect models were specified using the LME4 package v1.1-5 [2] with a Gaussian error structure and fitted with restricted maximum likelihood. Ldiff, Adiff, and Bdiff and Euclidean distances (∆E) for each participant relative to *Ds14*of their cycle were specified as response variables, with cycle-adjusted day and conception risk as fixed effects, each fitted with 3rd order polynomials in full models, and participant specified as a random effect. Full models were then simplified with the fitLMER function of the LMERConvenienceFunctions v2.5 using AIC and log-likelihood to backwards-fit the fixed effects [2]. Model residuals were checked to verify assumptions of homogeneity of variance and a normal error structure, and variables were transformed to meet these assumptions where necessary [3]. Conservative degrees of freedom were used to calculate *p*-values from maximum likelihood models using the R function pamer.fnc. Final models were also compared to null models (with no fixed effects) using ANOVAs, with full maximum likelihood models.

## Results

∆E varied with a 2nd degree polynomial of day, conception risk was removed from the simplified model (final model log∆E ~ poly(day, 2) + (1|participant), F2,231= 4.47; *p* = 0.012, deviance explained = 2.85%, the simplified maximum likelihood model was a better fit than the null, *p* = 0.012, effect size = 0.43 with the lowest difference on day 17, and highest on day 0, see Figure S1). Ldiff was not found to vary with day or conception risk, all terms were removed from the simplified model, and were not a better fit than the null (*p* > 0.05). Adiff varied linearly with day, conception risk was removed from the simplified model (final model: Adiff = day + (1|participant), F1,232= 12.14; *p* < 0.001; deviance explained = 3.06%, the simplified maximum likelihood model was a better fit than the null, *p* < 0.001, effect size = 0.89 with the difference decreasing with cycle day, see Figure S2). Bdiff was not found to vary with day or conception risk, all terms were removed from the simplified model, and were not a better fit than the null (*p* > 0.05).

**References**

1. R Core Team. R: A Language and Environment for Statistical Computing. Vienna, Austria: R Foundation for Statistical Computing; 2013.

2. Baayen RH, Davidson DJ, Bates DM. Mixed-effects modeling with crossed random effects for subjects and items. Journal of Memory and Language. 2008;59(4):390-412. doi: 10.1016/j.jml.2007.12.005.

3. Zuur A, Ieno EN, Walker N, Saveliev AA, Smith GM. Mixed effects models and extensions in ecology with R: Springer; 2009.