

Supplementary Table 3 - Cross-sectional associations of endogenous progestogens and estrogens with glycemic traits in women of KORA F4.

| | | 17-OHP | Progesterone | Progesterone ^a | E2 | E2 ^b | fE2 |
|--------------------|---------------------------------|---|---|---|---|---|---|
| | | β (95% CI) | β (95% CI) | β (95% CI) | β (95% CI) | β (95% CI) | β (95% CI) |
| Fasting Glucose | Model 1 | 0.071 (0.015 – 0.127) P = 0.013 | 0.042 (-0.015 – 0.099) P = 0.148 | - | 0.049 (-0.008 – 0.106) P = 0.093 | - | 0.094 (0.033 – 0.156) P = 0.003 |
| | Model 2 | 0.068 (0.014 – 0.123) P = 0.014 | 0.049 (-0.006 – 0.105) P = 0.081 | 0.054 (-0.001 – 0.109) P = 0.054 | 0.052 (-0.004 – 0.108) P = 0.067 | 0.055 (-0.000 – 0.111) P = 0.051 | 0.080 (0.020 – 0.141) P = 0.009 |
| | Model 2 (Sens.) ^c | 0.098 (0.032 – 0.164) P = 0.004 | 0.071 (0.007 – 0.136) P = 0.031 | - | 0.076 (0.014 – 0.137) P = 0.016 | - | 0.092 (0.026 – 0.159) P = 0.007 |
| 2h- glucose | Model 1 | -0.056 (-0.130 – 0.017) P = 0.131 | -0.050 (-0.124 – 0.025) P = 0.190 | - | -0.001 (-0.076 – 0.074) P = 0.974 | - | 0.028 (-0.053 – 0.108) P = 0.502 |
| | Model 2 | -0.053 (-0.125 – 0.019) P = 0.148 | -0.040 (-0.114 – 0.033) P = 0.278 | -0.036 (-0.109 – 0.037) P = 0.334 | 0.001 (-0.073 – 0.074) P = 0.987 | 0.001 (-0.072 – 0.075) P = 0.975 | 0.014 (-0.065 – 0.094) P = 0.725 |
| | Model 2 (Sens.) ^c | -0.057 (-0.145 – 0.031) P = 0.201 | -0.030 (-0.117 – 0.056) P = 0.492 | - | 0.017 (-0.065 – 0.098) P = 0.690 | - | 0.018 (-0.070 – 0.107) P = 0.682 |
| HbA _{1c} | Model 1 | -0.022 (-0.076 – 0.033) P = 0.438 | 0.032 (-0.023 – 0.087) P = 0.252 | - | 0.004 (-0.052 – 0.060) P = 0.888 | - | 0.123 (0.064 – 0.182) P < 0.001 |
| | Model 2 | -0.020 (-0.074 – 0.035) P = 0.481 | 0.040 (-0.015 – 0.095) P = 0.154 | 0.040 (-0.015 – 0.095) P = 0.150 | 0.008 (-0.048 – 0.064) P = 0.777 | 0.019 (-0.034 – 0.072) P = 0.481 | 0.121 (0.062 – 0.180) P < 0.001 |
| | Model 2 (Sens.) ^c | 0.007 (-0.057 – 0.071) P = 0.832 | 0.071 (0.008 – 0.133) P = 0.026 | - | 0.033 (-0.026 – 0.093) P = 0.271 | - | 0.139 (0.076 – 0.202) P < 0.001 |
| Fasting Insulin | Model 1 | -0.002 (-0.059 – 0.056) P = 0.959 | -0.033 (-0.092 – 0.026) P = 0.268 | - | -0.035 (-0.094 – 0.024) P = 0.244 | - | 0.008 (-0.056 – 0.071) P = 0.810 |
| | Model 2 | -0.003 (-0.059 – 0.052) P = 0.907 | -0.031 (-0.087 – 0.025) P = 0.279 | -0.027 (-0.083 – 0.029) P = 0.343 | -0.033 (-0.090 – 0.024) P = 0.260 | -0.030 (-0.088 – 0.027) P = 0.298 | -0.003 (-0.065 – 0.058) P = 0.913 |
| | Model 2 (Sens.) ^c | -0.005 (-0.072 – 0.062) P = 0.884 | -0.032 (-0.097 – 0.033) P = 0.336 | - | -0.013 (-0.075 – 0.050) P = 0.692 | - | 0.008 (-0.059 – 0.075) P = 0.814 |
| QUICKI | Model 1 | -0.021 (-0.079 – 0.036) P = 0.466 | 0.015 (-0.045 – 0.075) P = 0.625 | - | 0.018 (-0.043 – 0.078) P = 0.568 | - | -0.033 (-0.098 – 0.032) P = 0.316 |
| | Model 2 | -0.020 (-0.074 – 0.035) P = 0.486 | 0.010 (-0.047 – 0.066) P = 0.742 | 0.004 (-0.052 – 0.061) P = 0.879 | 0.014 (-0.043 – 0.072) P = 0.622 | 0.011 (-0.047 – 0.068) P = 0.713 | -0.018 (-0.080 – 0.044) P = 0.562 |
| | Model 2 (Sens.) ^c | -0.027 (-0.094 – 0.040) P = 0.433 | 0.005 (-0.060 – 0.071) P = 0.877 | - | -0.012 (-0.074 – 0.051) P = 0.717 | - | -0.034 (-0.101 – 0.034) P = 0.327 |

All results are from multivariate linear regression models. Adjusted for baseline age, waist circumference, height, triglycerides, total cholesterol/HDL-cholesterol ratio, hypertension, statin use (model 1), smoking, alcohol consumption, physical activity, CRP, eGFR, TSH, and parental diabetes history (model 2). Effect estimates with 95% CIs were calculated for a one sex-specific SD increase on the log scale of progestogen and estrogen levels, respectively. Significant results are printed in bold. Abbreviations: 17-OHP: 17 α -hydroxyprogesterone, CRP: C-reactive protein, eGFR: Estimated glomerular filtration rate, SHBG: Sex hormone-binding globulin, TSH: Thyroid-stimulating hormone.

^a *Models were additionally adjusted for albumin*

^b *Models were additionally adjusted for SHBG.*

^c *Sensitivity analyses: Perimenopausal women excluded (n = outcome specific).*