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| Supplementary figures 1A-B: GWAS results for estradiol as a continuous trait for women of European ancestry overall and in pre- and postmenopausal women only. |
| A A screenshot of a computer  Description automatically generated with medium confidence |
| B Chart, line chart  Description automatically generated |
| Figure A shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |

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| Supplementary figures 1C-D: GWAS results for estradiol as a continuous trait for women of African ancestry overall and in pre- and postmenopausal women only. |
| CA picture containing writing implement, stationary, pencil  Description automatically generated |
| DChart, line chart, scatter chart  Description automatically generated |
| Figure C shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |

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| Supplementary figures 2A: GWAS results for detectable levels of estradiol as a binary trait for women of European ancestry overall and in pre- and postmenopausal women only. |
| AChart, line chart  Description automatically generated |
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| Supplementary figures 2B-C: GWAS results for SHBG for women of African ancestry overall and in pre- and postmenopausal women only. |
| B |
| C |
| Figure A shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |

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| Supplementary figures 3A-B: GWAS results for testosterone for women of European ancestry overall and in pre- and postmenopausal women only. |
| AChart  Description automatically generated with medium confidence |
| BChart  Description automatically generated |
| Figure A shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |

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| Supplementary figures 3C-D: GWAS for tests of heterogeneity of effects between pre- and postmenopausal status estimates for testosterone in women of European ancestry. |
| CChart, line chart  Description automatically generated |
| DChart  Description automatically generated |
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| Supplementary figures 3E-F: GWAS results for testosterone for women of African ancestry overall and in pre- and postmenopausal women only. |
| EA screenshot of a computer  Description automatically generated with low confidence |
| FChart, line chart, scatter chart  Description automatically generated |
| Figure E shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |

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| Supplementary figures 4A-B: GWAS results for SHBG for women of European ancestry overall and in pre- and postmenopausal women only. |
| AChart  Description automatically generated with medium confidence |
| BChart  Description automatically generated |
| Figure A shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |

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| Supplementary figures 3C-D: GWAS for tests of heterogeneity of effects between pre- and postmenopausal status estimates for SHBG in women of European ancestry. |
| CChart, line chart  Description automatically generated |
| DChart, scatter chart  Description automatically generated |
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| Supplementary figures 4E-F: GWAS results for SHBG for women of African ancestry overall and in pre- and postmenopausal women only. |
| E |
| F |
| Figure E shows the Manhattan plots. Horizontal black line indicates Bonferroni correction threshold at p-value < 5E-8. Points in green indicate variants with p-value below a suggestive threshold of 1E-6, and red points indicate variants below Bonferroni correction p-value. |