# Supplementary material

**Birthweight, childhood body mass index, height and growth and risk of polycystic ovary syndrome**

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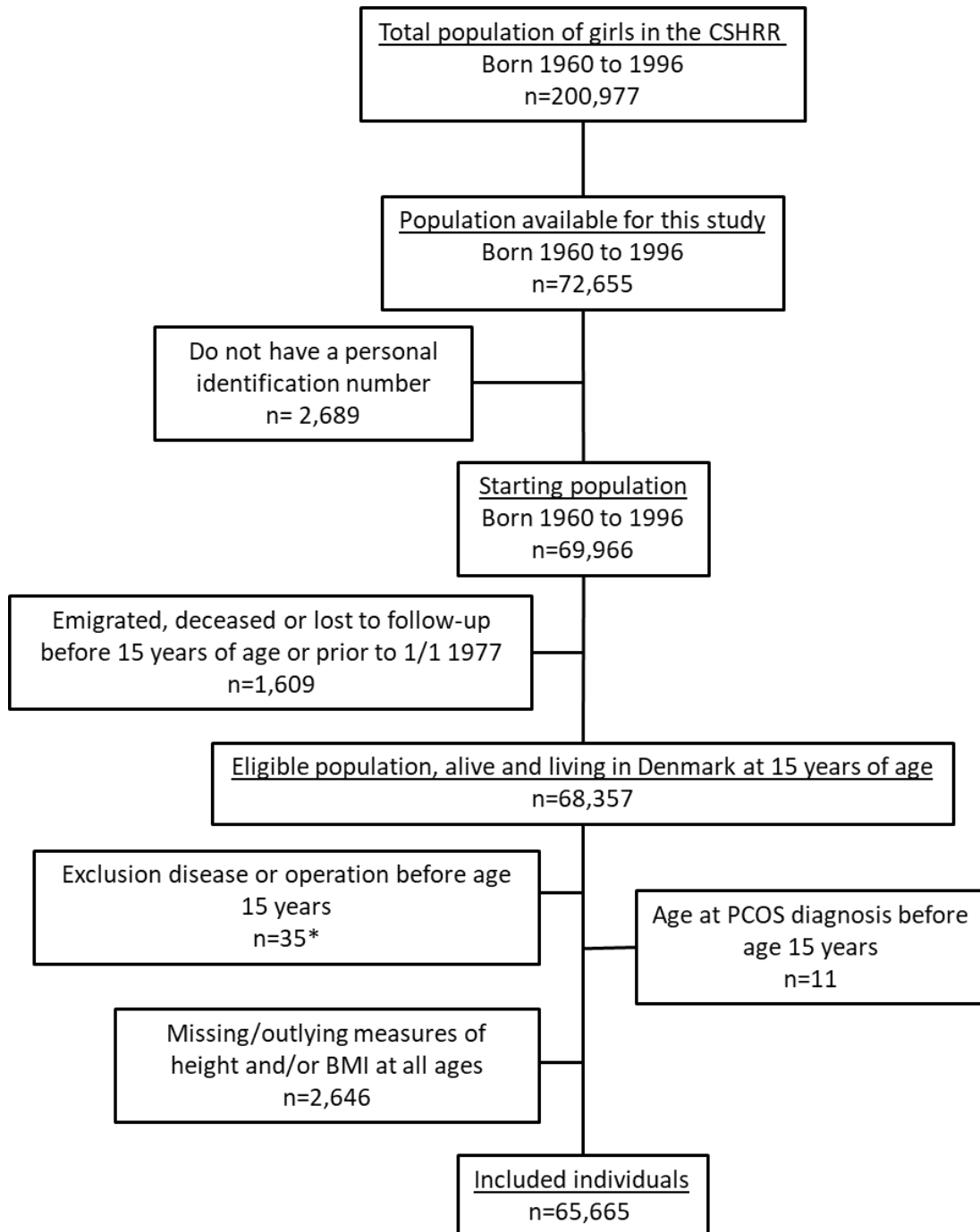
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**Supplementary Fig. S1.** Flow chart of eligible and included individuals in the study. BMI, body mass index; CSHRR, Copenhagen School Health Records Register.



Total population of girls in the CSHRR
Born 1960 to 1996
n=200,977

Population available for this study
Born 1960 to 1996
n=72,655

Do not have a personal identification number
n= 2,689

Starting population
Born 1960 to 1996
n=69,966

Emigrated, deceased or lost to follow-up before 15 years of age or prior to 1/1 1977
n=1,609

Eligible population, alive and living in Denmark at 15 years of age
n=68,357

Exclusion disease or operation before age 15 years
n=35*

Age at PCOS diagnosis before age 15 years
n=11

Missing/outlying measures of height and/or BMI at all ages
n=2,646

Included individuals
n=65,665

*Turner syndrome (n=22) and adrenogenital syndrome (n=7). Further, exclusions were made for other diseases (acromegaly, Cushing's disease, hyperprolactinemia) and operation (bilateral oophorectomy), which affected less than 5 individuals each.

**Supplementary Table S1.** Associations between childhood body mass index (BMI; kg/m$^2$) at each age from 7 to 13 years and risks of polycystic ovary syndrome. The associations were modelled using linear splines with a knot at a z-score of 0*

| | BMI z-score | | | |
|---|---|---|---|---|
| | z<0 | | z ≥ 0 | |
| Age (years) | HR | 95% CI | HR | 95% CI |
| 7 | 1.01 | 0.83–1.23 | 1.73 | 1.57–1.91 |
| 8 | 0.98 | 0.80–1.19 | 1.76 | 1.59–1.95 |
| 9 | 1.02 | 0.82–1.29 | 1.87 | 1.67–2.10 |
| 10 | 1.08 | 0.84–1.39 | 1.86 | 1.64–2.11 |
| 11 | 0.98 | 0.76–1.27 | 1.97 | 1.73–2.25 |
| 12 | 0.94 | 0.72–1.23 | 2.15 | 1.89–2.44 |
| 13 | 1.07 | 0.80–1.44 | 1.91 | 1.68–2.18 |

HR, hazard ratio; CI, confidence interval.
*Stratified by birth cohort.

**Supplementary Table S2.** Associations between different patterns of change in weight status from age 7 to 13 years and risks of polycystic ovary syndrome using girls with non-overweight at both ages as the reference*

| Weight status[†] | n | Cases | HR | 95% CI |
|---|---|---|---|---|
| Non-overweight at 7 and 13 years | 32,175 | 177 | 1.00 (ref.) | |
| Non-overweight at 7 years, overweight at 13 years | 2063 | 34 | 2.48 | 1.71-3.59 |
| Overweight at 7 years, non-overweight at 13 years | 1539 | 19 | 2.06 | 1.28-3.30 |
| Overweight at 7 and 13 years | 2508 | 65 | 3.91 | 2.93-5.21 |

HR, hazard ratio, CI, confidence interval.

* Stratified by birth cohort.

[†] Overweight defined using the International Obesity Task Force criteria.