SUPPLEMENTARY DATA

Supplementary Table 1. Mediation analyses in the InterAct sub-cohort participants

Mediator	**Total effect OR (95% CI)** [a]	**Direct effect OR (95% CI)** [b]	**Indirect effect OR (95% CI)** [c]	**Proportion mediated, % (95% CI)**[d]
BMI	1.68 (1.27-2.22)	1.33 (1.00-1.78)	1.23 (1.18-1.30)	40.7 (31.3 - 50.2)
Height	1.68 (1.27-2.22)	1.66 (1.26-2.20)	1.01 (1.00-1.03)	2.1 (-1.2 - 5.5)
Weight	1.68 (1.27-2.22)	1.39 (1.04-1.85)	1.16 (1.11-1.21)	28.8 (20.2 - 37.3)
Analyses were performed in the InterAct sub-cohort (n=9526; 372 cases) using logistic regression with adjustment for age at recruitment.				
[a]The total effect shows the association between early menarche and incident diabetes unadjusted for potential mediators.				
[b]The effect of early menarche independent of the specified mediator.				
[c]The effect of early menarche via the specified mediator.				
[d]The percentage of the total effect explained by the specified mediator, calculated as [$\log_e$(indirect effect)/$\log_e$(total effect)]				

Supplementary Table 2. Early menarche and hazard ratios for type 2 diabetes (1) diagnosed before the age of 60, and (2) diagnosed at 60 years or older analyses in the InterAct sub-cohort participants

	Diagnosis before the age of 60 years				**Diagnosis at 60 years or older**			
	N (cases)	*HR*	*95% CI*	*p*	N (cases)	*HR*	*95% CI*	*p*
Basic[a]	8321 (1544)	1.64	1.43-1.89	**<0.001**	9172 (2555)	1.67	1.43-1.95	**<0.001**
Adjusted[b]		1.70	1.47-1.95	**<0.001**		1.69	1.44-1.99	**<0.001**
Adjusted[c]		1.33	1.12-1.57	**0.001**		1.47	1.17-1.85	**0.001**
Results are from Prentice weighted Cox regression models stratified by country and combined using random effects meta-analysis; HR=hazard ratio for early menarche (8-11 years) compared with later menarche.								
N refers to the total number of individuals with non-missing data for all covariates and the number of these individuals that are incident cases of type 2 diabetes in brackets								
[a] Basic model adjusted for age at recruitment, date of birth and centre								
[b]Additionally adjusted for lifestyle factors (smoking status, physical activity level, alcohol intake and educational level), reproductive factors (age at first full term pregnancy, parity, menopausal status, use of oral contraceptive pill, use of hormone replacement therapy)								
[c]Additionally adjusted for lifestyle factors, reproductive factors and adult BMI								

SUPPLEMENTARY DATA

Supplementary Figure 1. Forest plots showing the association between early menarche (8-11 years) and risk of type 2 diabetes compared with girls with later menarche (12-18 years) before (a) and after (b) adjustment for adult BMI by InterAct country. Analyses are adjusted for age at recruitment, date of birth, centre, lifestyle and reproductive factors