

Supplementary Table 1. Risk of Invasive or *In Situ* Breast Cancer in Relation to Pubertal Variables, by Menopausal Status at Breast Cancer Incidence.

Pubertal variable	Premenopausal		Postmenopausal		
	<i>N</i> cases/ person- years	Adjusted ^a HR (95% CI)	<i>N</i> cases/ person-years	Adjusted ^a HR (95% CI)	
<i>Age at thelarche, years</i>					
≤10	50/31646	1.28 (0.92, 1.78)	101/21657	1.21 (0.97, 1.52)	
11-12	129/93573	Referent	314/79815	Referent	
≥13	63/55694	0.76 (0.56, 1.03)	206/62843	0.82 (0.69, 0.98)	*
HR for trend		0.77 (0.64, 0.93)		0.82 (0.73, 0.92)	**
<i>Age at menarche, years</i>					
≤12	125/85966	1.18 (0.91, 1.53)	324/82511	1.02 (0.87, 1.19)	
13-14	111/84229	Referent	333/84504	Referent	
≥15	17/17924	0.67 (0.40, 1.12)	66/20184	0.82 (0.63, 1.07)	
HR for trend		0.80 (0.65, 0.97)		0.93 (0.83, 1.04)	*
<i>Age at regular periods, years</i>					
≤12	58/38570	1.08 (0.77, 1.53)	154/40880	0.96 (0.78, 1.19)	
13-14	76/50827	Referent	216/54487	Referent	
≥15	23/23091	0.66 (0.41, 1.05)	81/26374	0.77 (0.60, 0.99)	*
Never had regular periods	17/13697	1.13 (0.66, 1.91)	56/11884	1.18 (0.88, 1.58)	
HR for trend ^b		0.81 (0.65, 1.01)		0.91 (0.80, 1.03)	
<i>Age reached adult height, years</i>					
≤14	52/35822	1.14 (0.79, 1.64)	146/36597	1.31 (1.03, 1.65)	*
15-16	67/54299	Referent	141/44336	Referent	
≥17	40/38938	0.87 (0.59, 1.29)	108/28928	1.17 (0.91, 1.50)	
HR for trend		0.88 (0.71, 1.08)		0.93 (0.82, 1.06)	
<i>Growth spurt between ages 7 and 11 years</i>					
No	249/190051	Referent	698/182031	Referent	
Yes	29/17698	1.26 (0.86, 1.86)	69/16561	1.07 (0.84, 1.37)	

Abbreviations: CI, Confidence interval; HR, Hazard ratio.

* P<0.05; ** P<0.01; *** P<0.001.

^a Adjusted for attained age, family history of breast cancer in a first-degree relative, adult height, age at first full-term pregnancy (with a term for nulliparous women) and hormone replacement therapy status.

^b Test for trend excludes those who had never had a regular period.

Supplementary Table 2. Risk of Invasive or *In Situ* Breast Cancer in Relation to Duration Between Pubertal Events, by Menopausal Status at Breast Cancer Incidence.

Pubertal variable	Premenopausal		Postmenopausal		
	N cases/ person- years	Adjusted ^a HR (95% CI)	N cases/ person- years	Adjusted ^a HR (95% CI)	
<i>Thelarche to menarche, years</i>					
<0	20/12926	1.37 (0.83, 2.26)	37/14454	0.72 (0.51, 1.03)	
0	64/52498	Referent	207/58670	Referent	
1	79/60246	1.12 (0.80, 1.55)	220/54721	1.15 (0.95, 1.39)	
≥2	56/36910	1.43 (1.00, 2.04)	99/23391	1.21 (0.95, 1.54)	
HR for trend		1.09 (0.94, 1.27)		1.15 (1.04, 1.27)	**
<i>Thelarche to regular periods, years</i>					
<0	9/4284	1.35 (0.65, 2.82)	15/5450	0.74 (0.43, 1.28)	
0	33/20303	Referent	94/25448	Referent	
1	45/33407	0.80 (0.51, 1.26)	132/37188	0.95 (0.73, 1.24)	
≥2	58/43573	0.87 (0.57, 1.33)	129/36576	0.95 (0.73, 1.24)	
Never became regular	17/13697	1.02 (0.57, 1.84)	56/11884	1.24 (0.89, 1.73)	
HR for trend ^b		0.91 (0.76, 1.09)		1.01 (0.90, 1.14)	
<i>Menarche to regular periods, years</i>					
0	99/63264	Referent	277/69438	Referent	
1	45/32900	0.86 (0.60, 1.23)	133/37849	0.87 (0.71, 1.07)	
≥2	13/16324	0.55 (0.31, 0.98)	41/14454	0.71 (0.51, 0.99)	*
Never became regular	17/13697	1.06 (0.63, 1.78)	56/11884	1.16 (0.87, 1.55)	
HR for trend ^b		0.78 (0.62, 0.99)		0.86 (0.74, 0.99)	*
<i>Menarche to adult height, years</i>					
<0	4/2694	1.07 (0.38, 3.03)	10/3177	0.85 (0.44, 1.63)	
0-1	32/23843	Referent	98/26649	Referent	
2-3	58/45246	1.06 (0.69, 1.63)	131/37666	0.93 (0.72, 1.21)	
≥4	45/44116	0.89 (0.56, 1.40)	120/33443	0.97 (0.74, 1.26)	
HR for trend		0.94 (0.77, 1.15)		1.00 (0.88, 1.13)	

Abbreviations: CI, Confidence interval; HR, Hazard ratio.

* P<0.05; ** P<0.01; *** P<0.001.

^a Adjusted for attained age, menopausal status, family history of breast cancer in a first-degree relative, adult height, age at first full-term pregnancy (with a term for nulliparous women) and hormone replacement therapy use.

^b Test for trend excludes those who had never had a regular period.

Supplementary Table 3. Sensitivity Analyses of Risk of Invasive or *In Situ* Breast Cancer in Relation to Pubertal Variables.

Pubertal variable	Age <60 years at baseline (n=85122)		Excluding younger relatives (n=73560)		Invasive breast cancer only as outcome (n=104931)		<i>In situ</i> breast cancer only as outcome (n=92209)	
	Adjusted ^a HR (95% CI)		Adjusted ^a HR (95% CI)		Adjusted ^a HR (95% CI)		Adjusted ^a HR (95% CI)	
<i>Age at thelarche, years</i>								
≤10	1.30 (1.06, 1.60)	*	1.26 (1.01, 1.57)	*	1.25 (1.02, 1.52)	*	1.14 (0.67, 1.94)	
11-12	Referent		Referent		Referent		Referent	
≥13	0.82 (0.69, 0.99)	*	0.79 (0.66, 0.95)	*	0.83 (0.70, 0.97)	*	0.62 (0.39, 1.00)	*
HR for trend	0.80 (0.71, 0.90)	***	0.80 (0.71, 0.90)	***	0.82 (0.74, 0.91)	***	0.73 (0.55, 0.97)	*
<i>Age at menarche, years</i>								
≤12	1.06 (0.91, 1.24)		1.05 (0.89, 1.23)		1.06 (0.92, 1.22)		1.04 (0.72, 1.50)	
13-14	Referent		Referent		Referent		Referent	
≥15	0.75 (0.56, 1.00)	*	0.66 (0.49, 0.90)	**	0.88 (0.69, 1.12)		0.15 (0.04, 0.61)	**
HR for trend	0.88 (0.78, 0.99)	*	0.86 (0.77, 0.97)	*	0.92 (0.83, 1.02)		0.70 (0.52, 0.95)	*
<i>Age at regular periods, years</i>								
≤12	1.03 (0.83, 1.27)		0.95 (0.77, 1.18)		1.06 (0.88, 1.28)		0.60 (0.35, 1.02)	
13-14	Referent		Referent		Referent		Referent	
≥15	0.69 (0.52, 0.91)	**	0.68 (0.52, 0.90)	**	0.77 (0.60, 0.98)	*	0.53 (0.27, 1.02)	
Never had regular periods	1.30 (0.97, 1.75)		1.09 (0.79, 1.49)		1.24 (0.94, 1.62)		0.75 (0.34, 1.66)	
HR for trend ^b	0.84 (0.74, 0.96)	*	0.88 (0.77, 1.00)		0.86 (0.77, 0.97)	*	1.01 (0.74, 1.38)	
<i>Age reached adult height, years</i>								
≤14	1.24 (0.99, 1.55)		1.41 (1.11, 1.80)	**	1.30 (1.06, 1.60)	*	0.90 (0.49, 1.66)	
15-16	Referent		Referent		Referent		Referent	
≥17	0.93 (0.72, 1.19)		1.16 (0.89, 1.50)		1.06 (0.85, 1.33)		1.11 (0.61, 2.01)	
HR for trend	0.86 (0.76, 0.98)	*	0.89 (0.78, 1.02)		0.89 (0.79, 1.01)		1.11 (0.80, 1.54)	
<i>Growth spurt between ages 7 and 11 years</i>								

No	Referent	Referent	Referent	Referent
Yes	1.24 (0.97, 1.57)	1.19 (0.93, 1.52)	1.20 (0.97, 1.49)	0.56 (0.25, 1.27)

Abbreviations: CI, Confidence interval; HR, Hazard ratio.

* P<0.05; ** P<0.01; *** P<0.001.

^a Adjusted for attained age, family history of breast cancer in a first-degree relative, adult height, age at first full-term pregnancy (with a term for nulliparous women) and hormone replacement therapy status.

^b Test for trend excludes those who had never had a regular period.

Supplementary Table 4. Sensitivity Analyses of Risk of Invasive or *In Situ* Breast Cancer in Relation to Duration Between Pubertal Events.

Pubertal variable	Age <60 years at baseline (n=85122)	Excluding younger relatives (n=73560)	Invasive breast cancer only (n=104931)	<i>In situ</i> breast cancer only as outcome (n=104931)
	Adjusted ^a HR (95% CI)	Adjusted ^a HR (95% CI)	Adjusted ^a HR (95% CI)	Adjusted ^a HR (95% CI)
<i>Thelarche to menarche, years</i>				
<0	0.86 (0.62, 1.20)	1.02 (0.74, 1.41)	0.93 (0.69, 1.25)	0.47 (0.17, 1.33)
0	Referent	Referent	Referent	Referent
1	1.09 (0.90, 1.32)	1.17 (0.95, 1.43)	1.13 (0.95, 1.35)	1.19 (0.75, 1.88)
≥2	1.13 (0.90, 1.43)	1.33 (1.05, 1.70)	1.32 (1.07, 1.63)	0.93 (0.50, 1.74)
HR for trend	1.08 (0.99, 1.19)	1.12 (1.02, 1.24)	1.13 (1.04, 1.24)	1.13 (0.89, 1.43)
<i>Thelarche to regular periods, years</i>				
<0	0.89 (0.53, 1.50)	1.02 (0.63, 1.63)	0.95 (0.61, 1.49)	0.38 (0.05, 2.96)
0	Referent	Referent	Referent	Referent
1	0.93 (0.71, 1.22)	0.80 (0.61, 1.06)	0.90 (0.71, 1.15)	1.05 (0.51, 2.17)
≥2	0.84 (0.64, 1.09)	0.85 (0.65, 1.12)	0.86 (0.67, 1.09)	1.63 (0.83, 3.20)
Never became regular	1.24 (0.89, 1.73)	1.08 (0.76, 1.53)	1.18 (0.87, 1.59)	1.26 (0.49, 3.19)
HR for trend ^b	0.94 (0.84, 1.05)	0.92 (0.82, 1.04)	0.94 (0.85, 1.04)	1.38 (1.01, 1.87)
<i>Menarche to regular periods, years</i>				
0	Referent	Referent	Referent	Referent
1	0.77 (0.62, 0.95)	0.89 (0.72, 1.10)	0.88 (0.72, 1.06)	0.82 (0.48, 1.41)
≥2	0.63 (0.45, 0.87)	0.61 (0.43, 0.88)	0.57 (0.41, 0.79)	1.41 (0.76, 2.63)
Never became regular	1.21 (0.91, 1.62)	1.09 (0.80, 1.49)	1.15 (0.88, 1.50)	0.97 (0.44, 2.16)
HR for trend ^b	0.78 (0.68, 0.91)	0.82 (0.71, 0.95)	0.80 (0.70, 0.91)	1.11 (0.81, 1.51)
<i>Menarche to adult height, years</i>				
<0	0.89 (0.46, 1.70)	1.07 (0.56, 2.06)	0.90 (0.51, 1.59)	1.00 (0.12, 8.00)

0-1	Referent	Referent	Referent	Referent
2-3	0.95 (0.73, 1.24)	1.03 (0.78, 1.36)	0.90 (0.71, 1.13)	2.00 (0.90, 4.46)
≥4	0.90 (0.69, 1.18)	1.00 (0.75, 1.32)	0.87 (0.68, 1.11)	2.02 (0.90, 4.46)
HR for trend	0.96 (0.85, 1.09)	0.99 (0.87, 1.13)	0.95 (0.85, 1.06)	1.32 (0.95, 1.84)

Abbreviations: CI, Confidence interval; HR, Hazard ratio.

* P<0.05; ** P<0.01; *** P<0.001.

^a Adjusted for attained age, menopausal status, family history of breast cancer in a first-degree relative, adult height, age at first full-term pregnancy (with a term for nulliparous women) and HRT use.

^b Test for trend excludes those who had never had a regular period.