

Supplementary table 1. Characteristics of cases and controls, overall sample.

	Cases	Controls
N	2075	3164
Women, n (%)	1502 (72)	2324 (73)
Swedish, n (%)	1640 (79)	2479 (78)
Sleep duration		
<7 hours/night	148 (8.3)	167 (6.2)
7-9 hours/night	1520 (84.8)	2305 (86.0)
10 or more hours/night	125 (7.0)	208 (7.8)
Phase shift		
<1 hour	1091 (60.9)	1640 (61.2)
1-3 hours	517 (28.8)	758 (28.3)
More than 3 hours	185 (10.3)	282 (10.5)
Sleep quality		
Very bad, n (%)	36 (2.0)	43 (1.6)
Rather bad, n (%)	80 (4.5)	89 (3.3)
Neither good nor bad, n (%)	181 (10.1)	194 (7.2)
Rather good, n (%)	590 (32.9)	892 (33.3)
Very good, n (%)	906 (50.3)	1463 (54.6)
Smoking, n (%)	1052 (51)	1321 (42)
Mean sun exposure (SD)	6.2 (1.8)	6.5 (1.9)
Mean adolescent BMI, kg/m (SD)	23.3 (13.1)	22.0 (6.4)
Infectious mononucleosis, n (%)		
No	1496 (72)	2538 (80)
Yes	381 (18)	377 (11)
Don't know	198 (10)	289 (9)
Age at disease onset (SD)	35.1 (10.5)	

Supplementary table 2. OR of MS with 95% CI for subjects with different habitual sleep duration in adolescence and at index.

Hours/night		ca/co ^a	OR (95% C) ^b	OR (95% C) ^c
Age 15-19 years	At index			
7-	7-	980/1743	1.0 (reference)	1.0 (reference)
7-	<7	516/611	1.5 (1.3-1.7)	1.5 (1.3-1.8)
<7	7-	58/69	1.5 (1.0-2.1)	1.5 (1.0-2.1)
<7	<7	239/257	1.6 (1.3-1.9)	1.6 (1.4-2.0)

^anumber of exposed cases and controls; ^badjusted for age, sex, residential area, and ancestry; ^cadjusted for age, sex, residential area, ancestry, smoking, IM history, and sun exposure.

Supplementary table 3. OR of MS with 95% CI for subjects with different habitual sleep duration at index.

Hours/night	ca/co ^a	Total		Similar sleep duration in adolescence and at index	
		OR (95% C) ^b	OR (95% C) ^c	OR (95% C) ^d	OR (95% C) ^e
<7	888/1179	1.3 (1.1-1.4)	1.3 (1.1-1.4)	1.3 (1.1-1.7)	1.5 (1.1-2.0)
7-9	863/1458	1.0 (reference)	1.0 (reference)	1.0 (reference)	1.0 (reference)
10-	42/43	1.6 (1.1-2.5)	1.7 (1.1-2.6)	0.9 (0.7-1.2)	1.0 (0.5-2.0)

^anumber of exposed cases and controls; ^badjusted for age, sex, residential area, and ancestry; ^cadjusted for age, sex, residential area, ancestry, smoking, IM history, and sun exposure.

Supplementary table 4. OR of MS with 95% CI for subjects with different sleep quality in adolescence and at index (assessed on a 5-grade scale).

Sleep quality (value)		ca/co ^a	OR (95% C) ^b	OR (95% C) ^c
Age 15-19 years	At index			
4-5	4-5	1133/2058	1.0 (reference)	1.0 (reference)
4-5	1-3	592/731	1.5 (1.3-1.7)	1.5 (1.3-1.7)
1-3	4-5	68/80	1.5 (1.1-1.1)	1.5 (1.1-2.2)
1-3	1-3	282/295	1.7 (1.3-2.0)	1.7 (1.4-2.1)

^anumber of exposed cases and controls; ^badjusted for age, sex, residential area, and ancestry; ^cadjusted for age, sex, residential area, ancestry, smoking, IM history, and sun exposure.

Questions from EIMS**Sleep duration**

At which time do you normally go to sleep during work or schooldays?

15-19 years Clock time:

20-29 years Clock time:

30-39 years Clock time:

40 years or older Clock time:

At which time do you normally wake up during work or schooldays?

15-19 years Clock time:

20-29 years Clock time:

30-39 years Clock time:

40 years or older Clock time:

At which time do you normally go to sleep during weekends or days off?

15-19 years Clock time:

20-29 years Clock time:

30-39 years Clock time:

40 years or older Clock time:

At which time do you normally wake up during weekends or days off?

15-19 years Clock time:

20-29 years Clock time:

30-39 years Clock time:

40 years or older Clock time:

Sleep quality

Generally, how would you describe your sleep?

very bad, rather bad, neither good nor bad, rather good, very good

Smoking

If you **do not smoke**, and **have never smoked**, put a cross in the box and proceed to the section

If you **smoke regularly**, or **have smoked regularly**, put a cross in the box.

Below, specify the time-period/time-periods and amount.

Try to specify the average amount. Nb! The number is specified **per day**.

From age	To age	Number of cigarettes per day
		Number of cigars/cheroots per day
		Number of pipe fills per day

If you **smoke non-regularly**, for example at parties, or **have smoked non-regularly**, put a cross in the box. Below, specify the time-period/time-periods and amount.

Try to specify the average amount. Nb! The number is specified **per week**.

From age	To age	Number of cigarettes per week
		Number of cigars/cheroots per week
		Number of pipe fills per week

Sun exposure

If the weather is sunny, how often do you usually sunbathe?

Never	A few times a month	A few times a week	Daily
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How often, during the last 5 years, have you visited a country that is sunnier than Sweden?

Never	More seldom	Once a year	More than once a year
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How often, during the last 5 years, have you used a sunbed?

Never	A few times a year	Once a month	Once a week
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Infectious mononucleosis

Infectious diseases that usually occur during childhood or youth

Have you had these infectious diseases?

1. Measles	No	Yes	Don't know	If "yes", specify at what age you think you had the disease:
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2. Mumps

3. Whooping cough

4. Chickenpox

5. Glandular fever

6. Other severe/long-lasting infection

If "yes", specify what infection