Supplement Materials

Highlighting the importance of healthy sleep patterns in the risk of adult asthma under the combined effects of genetic susceptibility: a large-scale prospective cohort study of 455,405 participants

Running title: Healthy sleep pattern and asthma

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Supplement Text:

Questions and the options of the 5 sleep traits.

1) Chronotype was assessed using the question: 'Do you consider yourself to be (a) definitely a "morning" person, (b) more a "morning" than "evening" person, (c) 'more an "evening" than "morning" person', or (d) definitely an "evening" person'.
2) Sleep duration was recorded by asking 'About how many hours sleep do you get in every 24 h? (include naps)'. Sleep duration was further categorized as short (<7 h/day), normal (7–8 h/ day), and long (>_9 h/day) in this research.
3) Insomnia was obtained by the question 'Do you have trouble falling asleep at night or do you wake up in the middle of the night?' with responses of (a) never/rarely, (b) sometimes, or (c) usually.
4) Snoring was collected by the question 'Does your partner or a close relative or friend complain about your snoring?' with responses of (i) yes or (ii) no.
5) Daytime sleepiness was coded based on the question 'How likely are you to doze off or fall asleep during the daytime when you don't mean to? (e.g. when working, reading or driving)' with responses of (a) never/rarely, (b) sometimes, (c) often, or (d) all of the time.

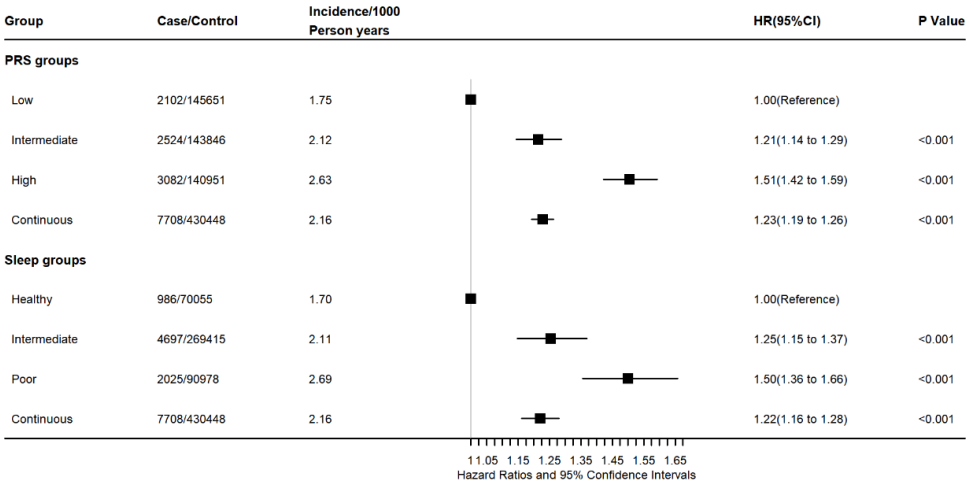

Figure S1. Multivariable-adjusted HRs (95%CIs) for asthma risk by polygenic risk score (PRS) and sleep patterns in 5-year lag analysis.

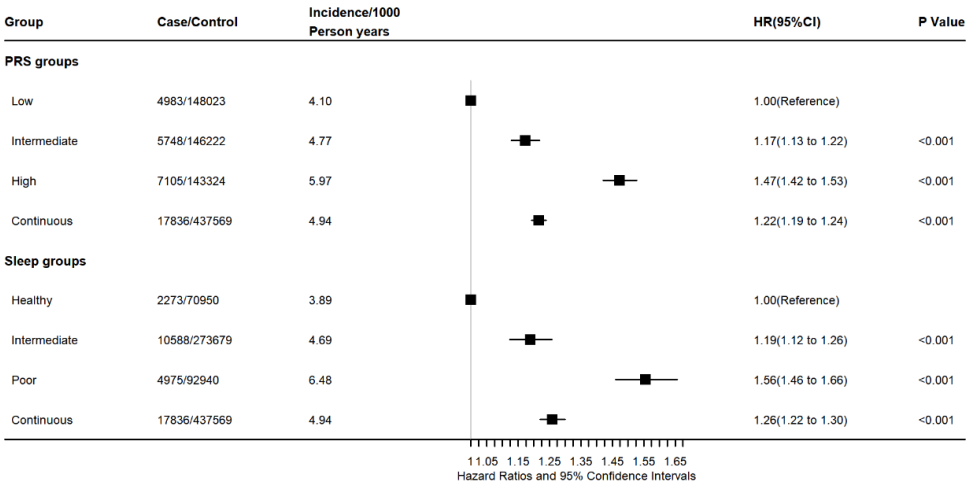

Figure S2. Multivariable-adjusted HRs (95%CIs) for asthma risk by polygenic risk score (PRS) and sleep patterns in basic covariates adjustment analysis.

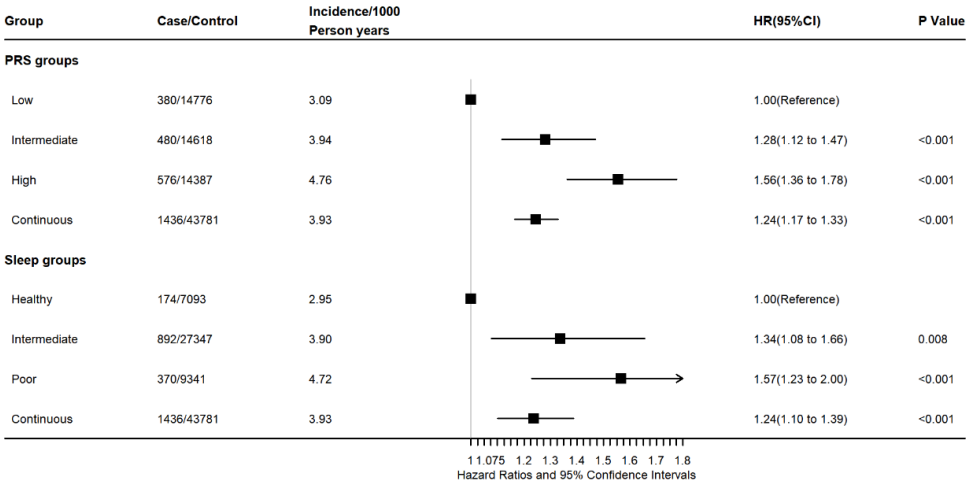

Figure S3. Multivariable-adjusted HRs (95%CIs) for asthma risk by polygenic risk score (PRS) and sleep patterns in repeated measurement participants.

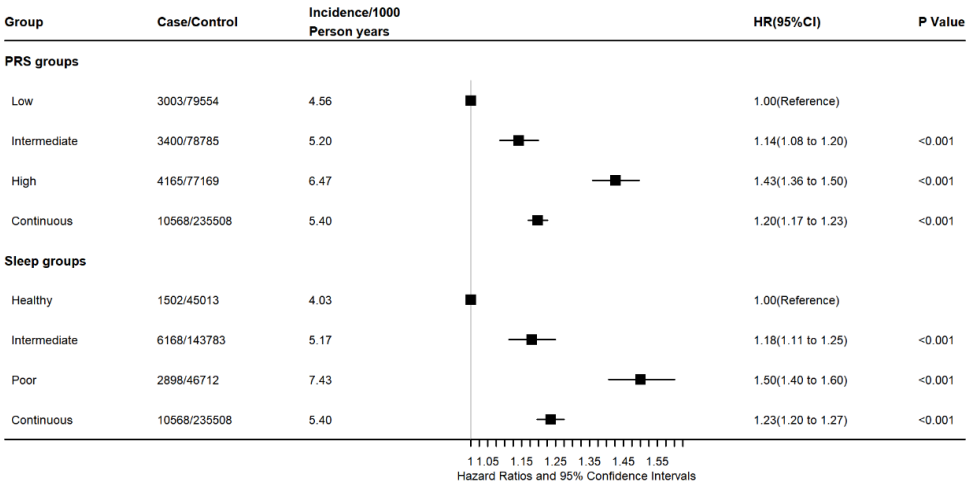

Figure S4. Multivariable-adjusted HRs (95%CIs) for asthma risk by polygenic risk score (PRS) and sleep patterns in females.

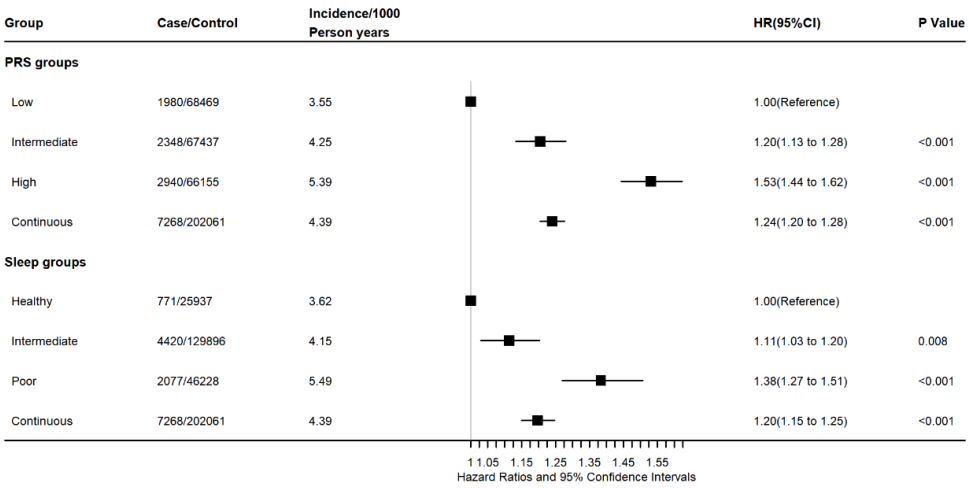

Figure S5. Multivariable-adjusted HRs (95%CIs) for asthma risk by polygenic risk score (PRS) and sleep patterns in males.

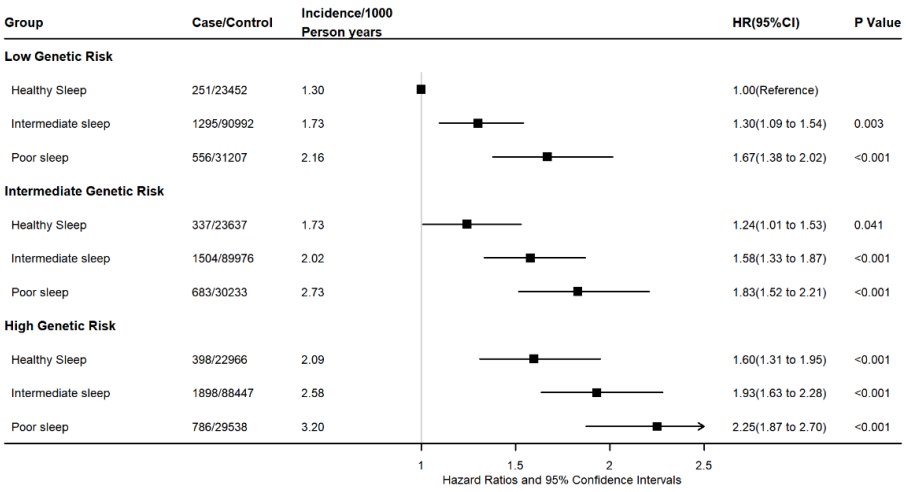

Figure S6. The joint association of genetic risk and sleep pattern with asthma in 5-year lag analysis.

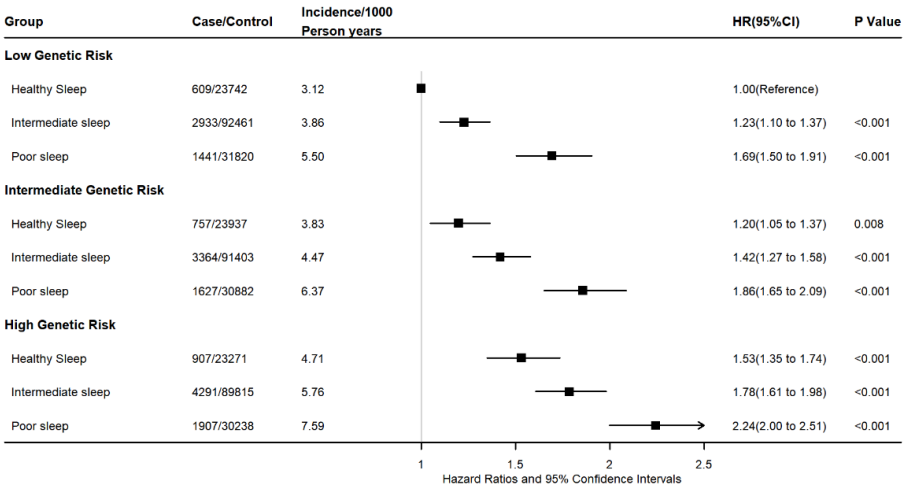

Figure S7. The joint association of genetic risk and sleep pattern with asthma in basic covariates adjustment analysis.

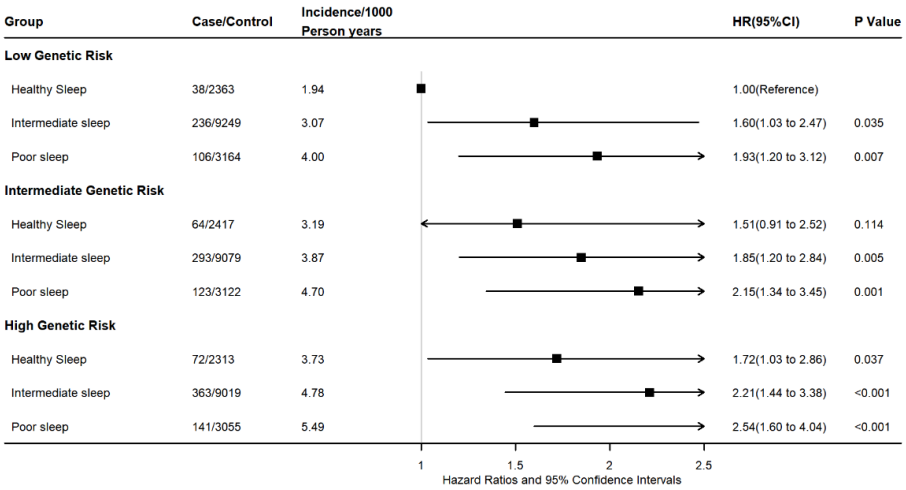

Figure S8. The joint association of genetic risk and sleep pattern with asthma in repeated measurement participants.

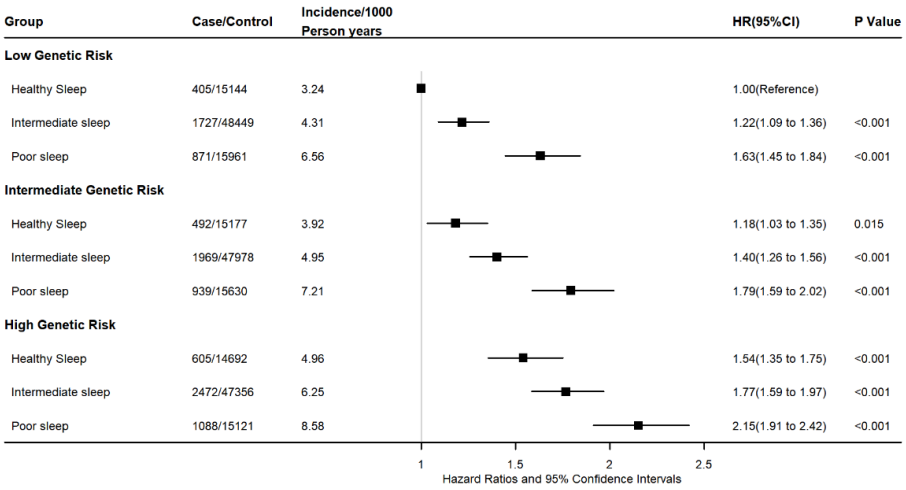

Figure S9. The joint association of genetic risk and sleep pattern with asthma in females.

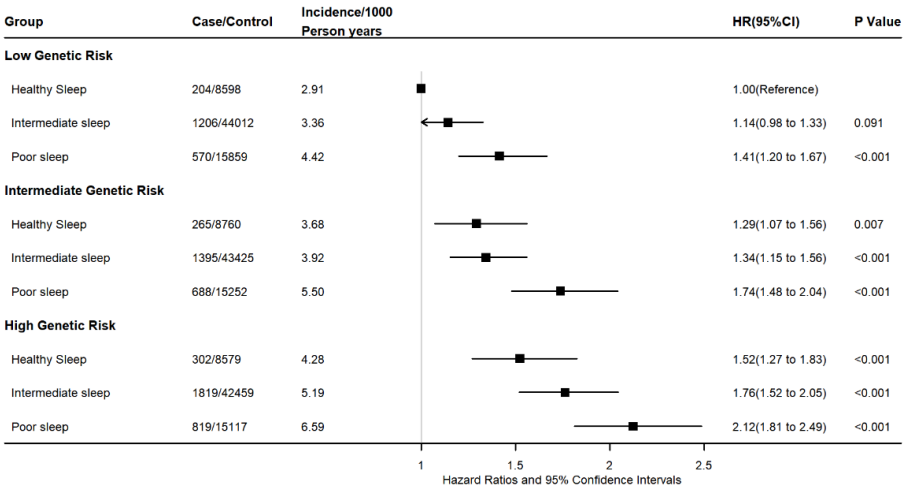

Figure S10. The joint association of genetic risk and sleep pattern with asthma in males.

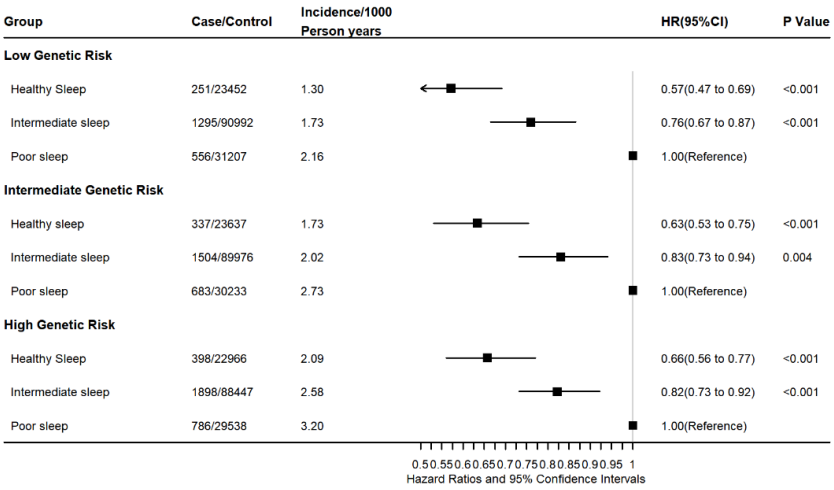

Figure S11. The associations between sleep pattern and risk of asthma by polygenic risk score (PRS) category in 5-year lag analysis.

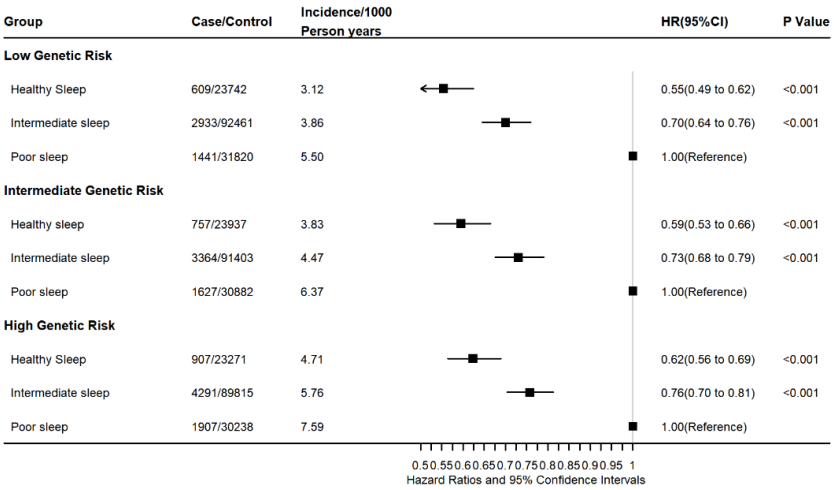

Figure S12. The associations between sleep pattern and risk of asthma by polygenic risk score (PRS) category in basic covariates adjustment analysis.

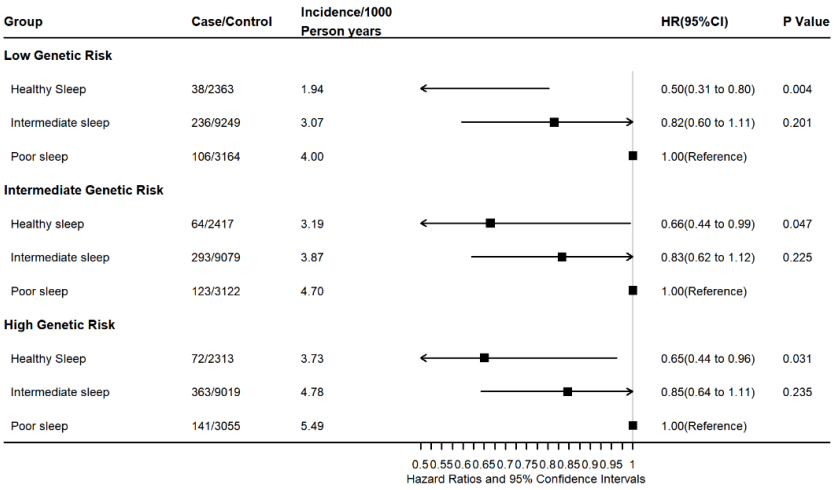

Figure S13. The associations between sleep pattern and risk of asthma by polygenic risk score (PRS) category in repeated measurement participants.

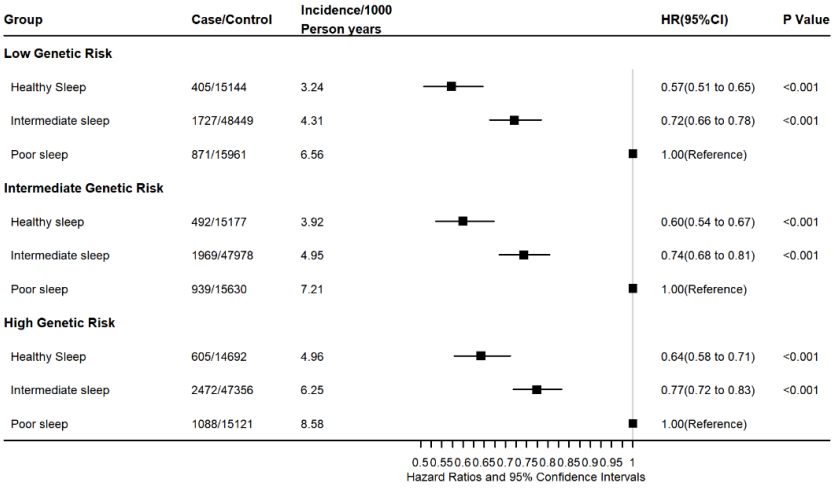

Figure S14. The associations between sleep pattern and risk of asthma by polygenic risk score (PRS) category in females.

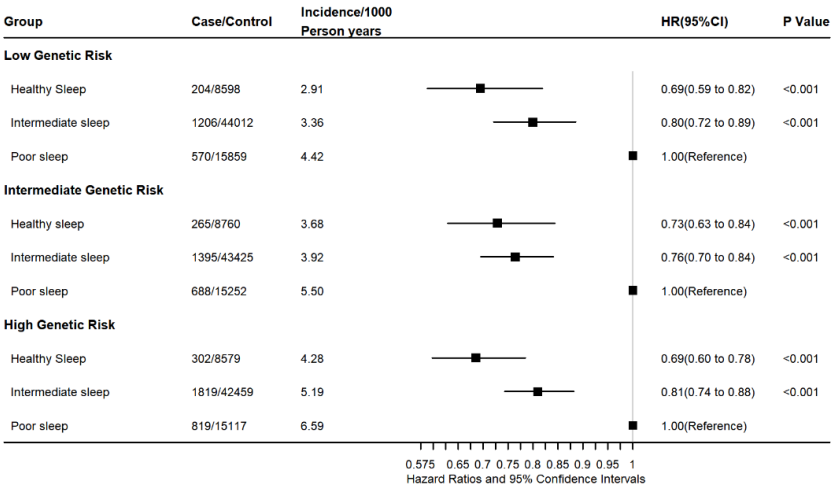

Figure S15. The associations between sleep pattern and risk of asthma by polygenic risk score (PRS) in males.

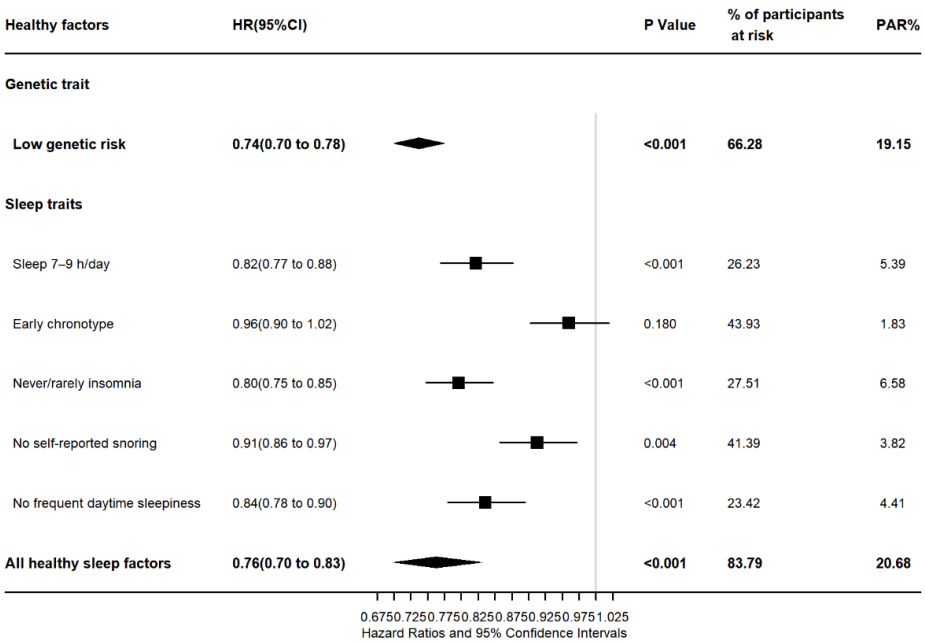

Figure S16. Multivariable-adjusted HRs (95%CIs) and PAR% for asthma risk by low-risk factors in 5-year lag analysis.

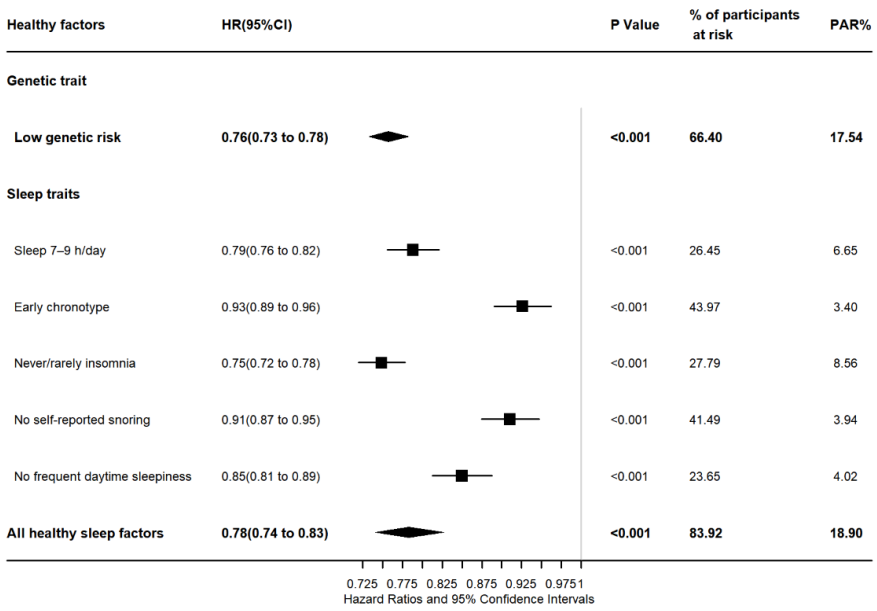

Figure S17. Multivariable-adjusted HRs (95%CIs) and PAR% for asthma risk by low-risk factors in basic covariates adjustment analysis.

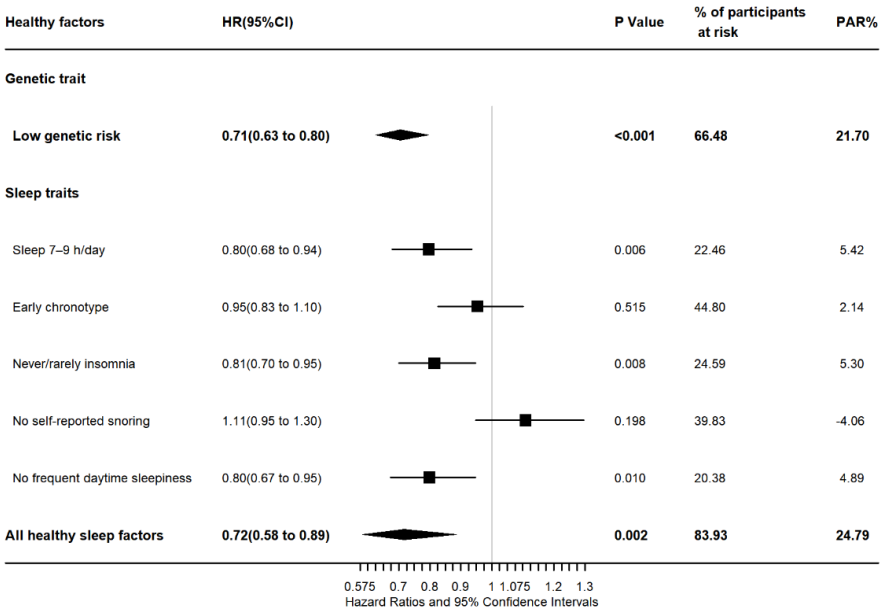

Figure S18. Multivariable-adjusted HRs (95%CIs) and PAR% for asthma risk by low-risk factors in repeated measurement participants.

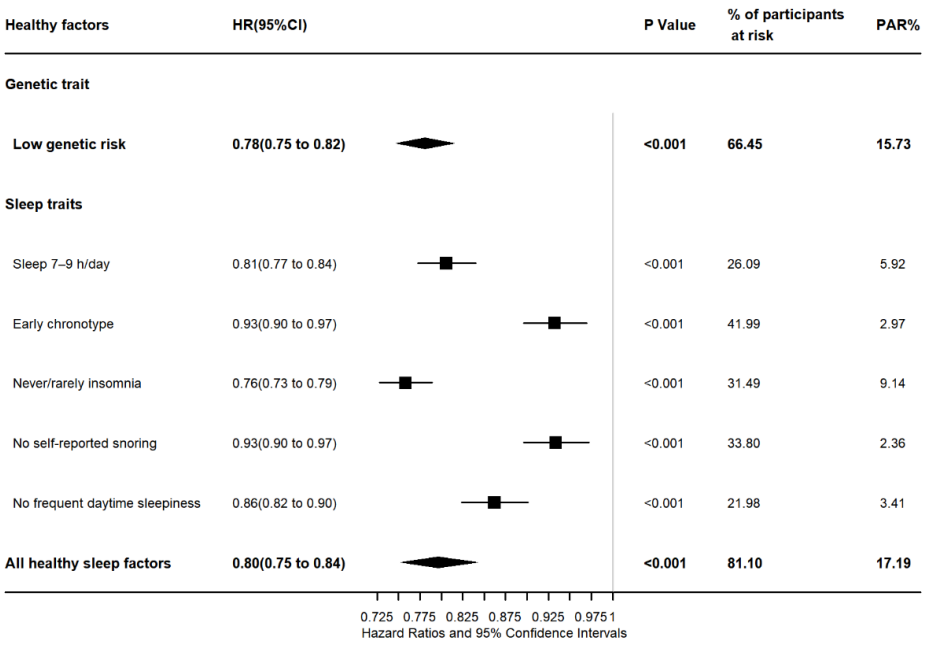

Figure S19. Multivariable-adjusted HRs (95%CIs) and PAR% for asthma risk by low-risk factors in females.

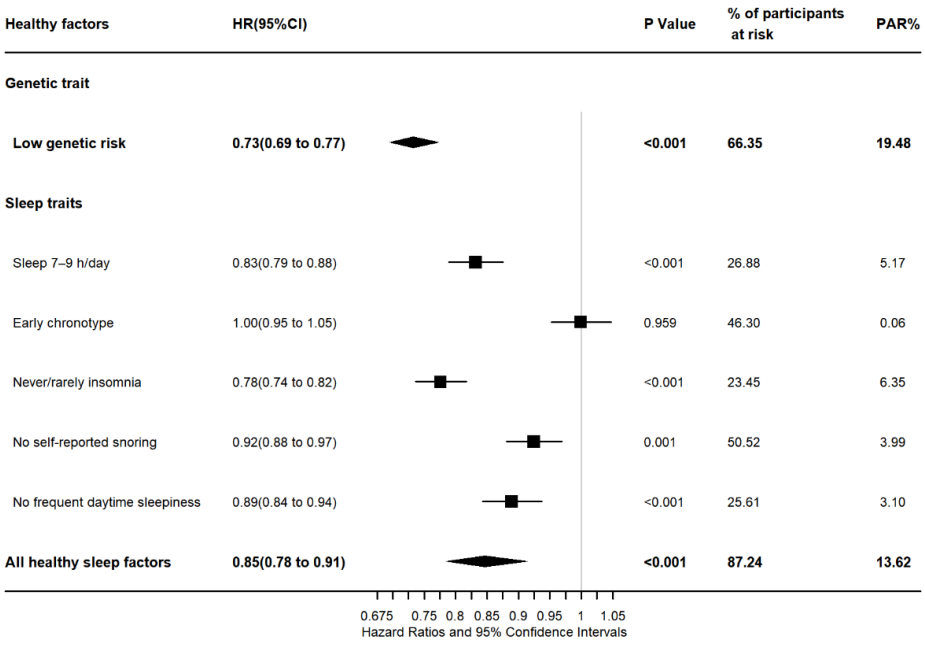

Figure S20. Multivariable-adjusted HRs (95%CIs) and PAR% for asthma risk by low-risk factors in males.