



## Letter to the Editor

## The serotonin transporter 5-HTTLPR polymorphism and the risk for insomnia: a non-replication



To the Editor,

In the June 2014 issue of *Sleep Medicine*, Huang et al. (2014) reported a genetic association study investigating the effect of 5-HTTLPR on insomnia [1]. In line with previous findings [2], the

results demonstrated that the 5-HTTLPR short allele was associated with a higher insomnia risk relative to the long allele. The authors revealed that an interaction between 5-HTTLPR and stress may further contribute to this relationship, corresponding with earlier findings on subjective sleep quality [3].

**Table 1**

Association between allelic variation in 5-HTTLPR and insomnia.

5-HTTLPR <sup>a</sup>	n	Insomnia <sup>b</sup>	Non-insomnia	OR [95% CI]	p-value
S'/S'	167	44	123	0.73 [0.46, 1.17]	0.191
S'/L'	338	106	232	0.94 [0.64, 1.38]	0.742
L'/L'	180	59	121	Reference	
p-value for $\chi^2$			0.383		
p-trend for OR			0.199		
p-value for HWE	0.738	0.777	0.646		

Note. CI, confidence interval; HWE, Hardy–Weinberg equilibrium; OR, odds ratio.

<sup>a</sup> Tri-allelic variation within 5-HTTLPR including S'/S' (S/S, S/L<sub>g</sub>, L<sub>g</sub>/L<sub>g</sub>), S'/L' (S/L<sub>a</sub>, L<sub>g</sub>/L<sub>a</sub>) and L'/L' (L<sub>a</sub>/L<sub>a</sub>).

<sup>b</sup> Participants with Athens insomnia scale (AIS-5) score > 2 are classified as insomnia [1].

**Table 2**

Interaction between 5-HTTLPR and stress on insomnia.

5-HTTLPR	Stress <sup>a</sup>	Insomnia	Non-insomnia	OR [95% CI]	p-value
S'/S'	High	28	36	3.94 [1.88, 8.28]	<0.001
	Low	15	87	0.87 [0.40, 1.90]	0.734
S'/L'	High	73	89	4.16 [2.20, 7.84]	<0.001
	Low	32	141	1.15 [0.59, 2.26]	0.685
L'/L'	High	43	44	4.95 [2.47, 9.92]	<0.001
	Low	15	76	Reference	

Note. CI, confidence interval; OR, odds ratio.

<sup>a</sup> Participants were classified as high and low stress using mean split [1] of the PSS score ( $M = 11.48$ ).

**Table 3**

Conditional logistic regression analyses for the influence of 5-HTTLPR and stress on insomnia.

Stress	S'/S'		S'/L'		L'/L'	
	Insomnia	Non-insomnia	Insomnia	Non-insomnia	Insomnia	Non-insomnia
High	28	36	73	89	43	44
	OR <sub>genotype</sub> = 0.80 [0.42, 1.52]		OR <sub>genotype</sub> = 0.84 [0.50, 1.41]		reference	
Low	15	87	32	141	15	76
	OR <sub>genotype</sub> = 0.87 [0.40, 1.90]		OR <sub>genotype</sub> = 1.15 [0.59, 2.26]		reference	
	OR <sub>stress</sub> = 4.51 [2.16, 9.43]*		OR <sub>stress</sub> = 3.61 [2.21, 5.92]*		OR <sub>stress</sub> = 4.95 [2.47, 9.92]*	

Note. OR<sub>genotype</sub>, odds ratio for genotype within the high stress or low stress group; OR<sub>stress</sub>, odds ratio for stress within the S'/S', S'/L' or L'/L' group.

\* $p < 0.001$ .

### Conflict of interest

None.

The ICMJE Uniform Disclosure Form for Potential Conflicts of Interest associated with this article can be viewed by clicking on the following link: <https://doi.org/10.1016/j.sleep.2018.01.015>.

### References

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Jens H. van Dalfsen\*, C. Rob Markus

*Department of Neuropsychology and Psychopharmacology, Faculty of Psychology and Neuroscience, Maastricht University, The Netherlands*

\* Corresponding author. Department of Neuropsychology and Psychopharmacology, Faculty of Psychology and Neuroscience, Maastricht University, Universiteitssingel 40, 6229 ER, Maastricht, The Netherlands. Fax: +31 43 3884196.

*E-mail address:* [jens.dalfsen@maastrichtuniversity.nl](mailto:jens.dalfsen@maastrichtuniversity.nl) (J.H. van Dalfsen).

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