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Night shift and cognitive performance: response to comments by Zijlstra

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Dear Editor,

We read with interest the letter by Dr. Zijlstra [1]. The effects of stress among ICU caregivers are essential and recurrent while being poorly studied. Stress can favorably alter activity or, in contrast, promote passivity. It may be present day and night. However, we have not chosen to study this parameter in our study [2] and we did not use any specific measure of this parameter. Moreover, the parallel with animal studies [1] may be hazardous. The interesting feature of our study is that it was done in real-life conditions.

We compared residents and staff physicians. One might expect that younger doctors are more stressed

during their activity. If stress had been a key element in the cognitive impairment, a huge difference would have been reported between the staff physicians and the residents. However, our results did not confirm this hypothesis and there was no significant interaction between experience and performance [2].

When one considers in particular cognitive flexibility ability, we must emphasize that we found a decline (and not an improvement) after the night shift condition (the best score was 32, the worst was 64; Figs. 2 and 3) [2]. It is true that residents' performance was significantly decreased after a night shift. Considering the numbers of slept hours, we highlighted a recovery of cognitive flexibility ability after at least 2 h of sleep. This latter result suggests that more than stress, the importance of sleep deprivation seems to be involved in these cognitive modifications.

Finally, we would use the term "dumber" cautiously. Even if we reported that the cognitive performance of intensivists significantly decreased after a night shift, we did not evaluate the potential impact regarding quality of care. Indeed, intensivists remained in the mean (± 1 SD) of performance of their reference population.

To conclude, we totally agree with the interest in a study about cognitive capacity at the end of a day shift compared with the end of a night shift. This kind of study in France is more feasible in the emergency room unit because of the organization of working hours. The impact of stress should also be evaluated.

References

1. Zijlstra JG (2015) Does night shift, stress or both make us dumber? *Intensive Care Med.* doi:10.1007/s00134-015-4152-z
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