

Title: Intrusive memories of an analogue traumatic event reduced with prolonged wakefulness

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Objectives: To investigate the effect of prolonged wakefulness following an analogue traumatic event on subsequent intrusive memories.

Methods: Healthy participants (aged 18-35yrs) were shown a traumatic film before either being asked to stay awake for 24hrs (sleep deprived (SD), n=23) or sleeping as normal (sleep (S), n=24) at home. After the trauma film, participants were monitored with polysomnography for the first night and actigraphy for seven days. Intrusive memories of the film were self-reported in a diary over the week. Nine participants in the sleep deprived group remained awake, however 14 participants slept to varying degrees. To account for the different amounts and timings of sleep, the frequency of intrusive memories was calculated for each period of wake, starting from the end of the trauma film, for seven days.

Results: The first wake period was 17.4hrs for the SD group, compared to 5.7hrs for the S group, and the second wake period 14.56hrs compared to 16.9hrs. Generalized linear modeling of the rate of intrusive memories for the length of each wake period, revealed that from the first wake period to the second (i.e. after one sleep period), the SD group reported a decrease in the frequency of intrusive memories while the S group showed an increase.

Conclusion: Our findings suggest that a period of prolonged wakefulness at home prevents an initial increase in intrusive memory frequency. These findings support our previous findings that sleep deprivation in the lab results in fewer intrusive memories being reported (Porcheret et al 2015).