

Conclusions: The present two studies show that moderate increases in stress/worries at bedtime are associated with moderately impaired sleep. It also shows that recovery from burnout is associated with reduced fatigue and reduced sleep fragmentation. Return to work is associated with reduced fatigue.

Everyday stress and sleep

Stress is assumed to impair sleep, but there is very little empirical evidence for this in terms of sleep recordings.

Method: Here we recorded sleep (at home) in 33 normals on three nights which preceded days with low, high and intermediate stress. The participants made daily ratings of the level of stress/worries at bedtime and also two-hourly ratings of stress. Only those 16 individuals who differed in stress/worries between two nights were analyzed.

Results: There was a significantly lower sleep efficiency, a higher percent Wake and a longer latency to Stage 3 during the nights with a higher stress/worry bedtime rating. None of the other sleep variables were affected. Mean daytime stress ratings were significantly higher on the day preceding and following the high/stress/worries sleep.

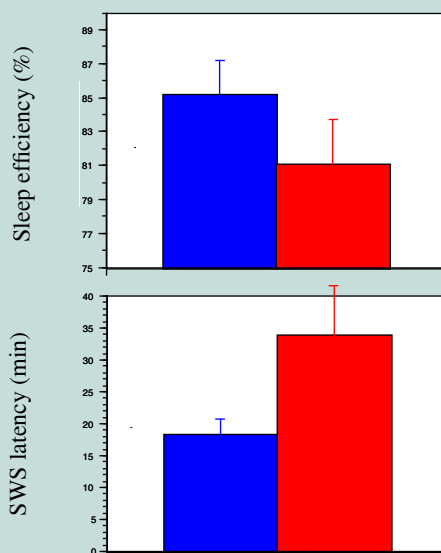


Figure 1. Sleep efficiency and SWS latency after high (red) and low (blue) bedtime stress.

Reference: Åkerstedt T, Kecklund G, Axelsson J. Impaired sleep after bedtime stress and worries. *Biol Psychol* 2007;75:170-173

Sleep and recovery from burnout

Nothing is known about the changes in sleep physiology and fatigue during recovery from burnout.

Methods: 23 white-collar workers on long-term sick leave (>3 months) with work related burnout complaints (ICD diagnosis Z73) and 16 healthy controls with high vs low scores on the Shirom Melamed Burnout Questionnaire (SMBQ) were included. The participants underwent a sleep and stress treatment program. Polysomnographic recording (after habituation) was carried out at baseline and after six to twelve months (i.e post treatment).

Results: Sleep improved in the burnout group while it remained essentially the same in the control group. Significant interaction effects were seen for number of arousals, sleep fragmentation, WASO, sleep latency, sleep efficiency and time of rising. Fatigue was reduced. About half the sick-listed individuals had returned to full or part time work at the post-treatment measure. The number of arousals per hour was reduced and was related to low post-treatment levels of fatigue index. Return to work correlated with low final levels of fatigue.

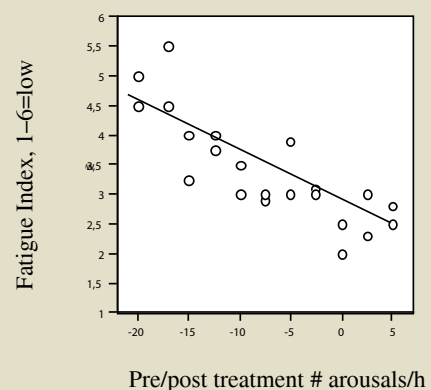


Figure 2. Change in fatigue vs change in number of arousals pre- and post-recovery from burnout.

Reference: Ekstedt M et al. 2007 (subm)