Methods/Study design
36 healthy volunteers performed 55 cognitive performance tasks at three-hourly intervals in a 11-day inpatient study:

After two baseline nights with 8 h time in bed (TIB) the intervention group underwent chronic sleep deprivation (CSD) for 5 nights (5 h TIB) with a following recovery night of 8 h TIB. The control group had the opportunity to sleep 8 hours every night. Participants completed the Karolinska Sleepiness Scale (KSS) and a questionnaire about their motivation (from 1=very little/not motivated to 5=very motivated) at 6 p.m. on all days.

Results
Sleepiness increased in the course of chronic sleep deprivation and resulted in a significant difference after total sleep deprivation (TSD) between control and intervention group (Figure 2, A). A significant difference between the two groups according to motivation is already found at the fifth chronic sleep deprivation day (control: 3.0 ± 1.3, experimental: 2.2 ± 0.6) and remained after recovery sleep (control: 3.1 ± 1.0, experimental 2.3 ± 0.6) and total sleep deprivation (control: 2.9 ± 1.3, experimental: 1.8 ± 0.8) (see Figure 2, B).

Conclusions:
- Chronic sleep restriction for five days leads to an increase in sleepiness and a decrease in motivation
- One night of recovery is insufficient to reverse the motivation loss, contrasting with the beneficial effect on sleepiness
- Subjective motivation seems to decrease as a function of subjective sleepiness
- Without sleep loss, motivation remains high during long-lasting studies

Cognitive performance task results base on study design and not on motivation loss