

# The stillness of sleep

1. William Wisden,
2. Nicholas P. Franks

See all authors and affiliations

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## Summary

When animals fall asleep, skeletal muscle movement largely ceases. The lack of movement during sleep is an actively controlled process, just like sleep itself. There are specialized sleep-inducing neurons that mostly reside in the brainstem and hypothalamus (1). Until now, active repression of movement during sleep was thought to mainly apply to rapid eye movement (REM) sleep, which is when the neocortex exhibits a wake-like activity and dreaming is vivid. Conversely, for the first stage of sleep, non-REM (NREM) sleep, when activity of neurons in the neocortex synchronize at 0.5 to 4 Hz (called delta waves), it was unknown whether movement was actively repressed. On page 440 of this issue, Liu *et al.* (2) find that entering NREM sleep and stopping movement are wired together in mice. This is controlled by a brain region called the substantia nigra pars reticulata (SNr), which was thought to control motor actions only when mice are awake.

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