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Sommario/riassunto	<p>It is now well established that sleep and wakefulness are locally regulated. In fact, typical sleep hallmarks, such as slow waves and spindles, display a clear regional modulation based on maturational and experience-dependent brain plasticity. Of note, these regional changes have been suggested to reflect the off-line processing and transformation of wake-dependent brain modifications, in line with a direct involvement of sleep in learning and memory consolidation. In addition, recent work showed that islands of wakefulness and sleep may often coexist in the same individual. Indeed, the incidence of local sleep-like episodes during wakefulness increases following sleep restriction or deprivation, but also as a consequence of the reiterated or extended 'use' of task-related brain areas. Such sleep-like activity seems to represent an index of 'functional fatigue' and may have a significant impact on behavior and cognition. On the other hand, local wake-like activity may occur during sleep and has been suggested to be involved in the generation and characterization of dream experiences. Finally, alterations in the balance between local aspects of sleep and wakefulness may contribute to explain symptoms commonly attributed to many sleep disorders, such as insomnia or sleepwalking. However, preliminary evidence has also pointed to their potential involvement in neurological (e.g., stroke) and psychiatric (e.g., major depression) pathological conditions. This Research Topic collects</p>

articles related to the investigation and characterization of local aspects  
of sleep and wakefulness.

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