**Scoring of Sleep and Associated Events**

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The gold standard for scoring sleep according to the rules defined by the American Academy of Sleep Medicine (AASM) relies on human expert scoring based on neurological signals. However, there is a current move from visual towards automated scoring. Significant advances in machine learning have resulted in powerful methods for addressing complex classification problems such as automated scoring of sleep and associated events. Evidence is increasing that these autoscoring systems deliver perfor­mance comparable to manual scoring and offer several advantages to visual scoring: (1) avoidance of the rather expensive, time-consuming, and difficult visual scoring task that can be performed only by well-trained and experienced human scorers, (2) attain­ment of consistent scoring results, and (3) proposition of added value such as scoring in real time, sleep stage probabilities per epoch (hypnodensity), estimates of signal quality and sleep/wake-related features, identifica­tions of periods with clinically relevant ambi­guities (confidence trends), configurable sensitivity and rule settings, as well as cardio­respiratory sleep staging to provide sleep stage information even in the absence of neurological signals.