

on an electroencephalogram readout by low-amplitude, high-frequency neuronal activity. REM sleep is characterized by rapid motion of the eyes beneath closed lids. This is the stage of sleep associated with vivid dreams, and it is thus sometimes called dream sleep. Some dreams may occur within other stages as well, but they lack the rich visual and emotional content of REM dreams. The function of this fascinating phenomenon remains at least a partial mystery.

Current research examines links between sleep, or stages of sleep, and memory or learning. Some studies suggest that all-night cram sessions, such as the one Rosemount is planning, do not improve performance and may even have the opposite effect (Kelly, Kelly, & Clanton, 2001; Pilcher & Walters, 1997). The idea that sleep is linked to learning is supported by studies showing that certain types of learning are hampered by sleep disruption or deprivation (Horne, 1988; Karni, Tanne, Rubenstein, Askenasy, & Sagi, 1994).

Some studies implicate REM sleep as having a particularly important role in memory consolidation (Karni et al., 1994). Early research showed the importance of REM sleep for rats. Hunt (1989) summarizes a few of these early studies that indicate the importance of the timing of REM sleep:

Over the past few years Carlyle Smith (1981) has studied the REM augmentation following learning in rats over several days and has found that these increases occur as regular “windows” that climb steadily over a six-day period (Smith and Lapp, 1984). Deprivation of REM during these specific windows of augmentation was at its most effective in disrupting prior learning between 48 and 60 hours after training (Smith and Kelly, 1986). (p. 28)