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Neonates NREM sleep**Boutopoulou Barbara**

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NREM sleep is the distinct stage of sleep during which essential brain functions related to neonates' neurodevelopmental outcome, take place. The multisensory environment of neonatal intensive care unit (NICU) often interrupts or inhibits neonatal NREM affecting its quality and duration. The purpose of this study was to investigate the relation between noise and light levels in the NICU environment and NREM sleep duration. Neonatal sleep was recorded through aEEG in three consecutive days. Recordings on the first day were under baseline conditions, the second day under sound intensity reduction, and the third day under light intensity reduction. Thirty-two neonates finished all the

different parts of the study and were finally included in the analysis. By reducing sound or light intensity the duration of NREM sleep increased significantly ($p < 0.001$, and $p < 0.001$, respectively). No significant statistical differences were found in REM and total sleep duration among the 3 different days. Intense noise and light affect NREM sleep and may have detrimental effects on neurodevelopmental outcome of hospitalized neonates. Medical and nursing staff should be aware of the neonates' needs for adequate and good-quality sleep and implement interventions to optimize the NICU surroundings.

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