

Publication

Age effects on spectral electroencephalogram activity prior to dream recall.

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4661751

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Year 2012

Title Age effects on spectral electroencephalogram activity prior to dream recall.

Journal Journal of sleep research

Volume 21

Number 3

Pages / Article-Number 247-56

Mesh terms Adult; Aged; Aging, physiology; Brain, physiology; Dreams, physiology; Electroencephalography; Female; Humans; Male; Mental Recall, physiology; Middle Aged; Polysomnography; Sleep, physiology; Sleep, REM, physiology; Young Adult

Ageing is associated with marked changes in sleep timing, structure and electroencephalographic (EEG) activity. Older people exhibit less slow-wave and spindle activity during non-rapid eye movement (NREM) sleep, together with attenuated levels of rapid eye movement (REM) sleep as compared to young individuals. However, the extent to which these age-related changes in sleep impact on dream processing remains largely unknown. Here we investigated NREM and REM sleep EEG activity prior to dream recall and no recall in 17 young (20-31 years) and 15 older volunteers (57-74 years) during a 40 h multiple nap protocol. Dream recall was assessed immediately after each nap. During NREM sleep prior to dream recall, older participants displayed higher frontal EEG delta activity (1-3 Hz) and higher centro-parietal sigma activity (12-15 Hz) than the young volunteers. Conversely, before no recall, older participants had less frontal-central delta activity and less sigma activity in frontal, central and parietal derivations than the young participants. REM sleep was associated to age-related changes, such that older participants had less frontal-central alpha (10-12 Hz) and beta (16-19 Hz) activity, irrespective of dream recall and no recall. Our data indicate that age-related differences in dream recall seem to be directly coupled to specific frequency and topography EEG patterns, particularly during NREM sleep. Thus, the spectral correlates of dreaming can help to understand the cortical pathways of dreaming.

ISSN/ISBN 1365-2869

Full Text on edoc ;

Digital Object Identifier DOI 10.1111/j.1365-2869.2011.00947.x

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/21851439>