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Do Antidepressants Cause Memory Gaps?

Suppression of REM sleep inhibits learning processes

Depression can be treated successfully with medications that effectively suppress REM sleep. Not only do most dreams occur during this sleep phase, our brains also consolidate and store our memories during this period. As recently discovered by scientists at the Charité – Universitätsmedizin Berlin, this suppressing of REM sleep can also cause learning and memory disorders. The results of their study have now been published in the professional journal *Sleep**.

People affected by depression are visibly listless; to others they seem tired and 'worn out'. In reality, however, they experience inner tension and their brains run at full capacity. There is scientific evidence that the use of certain antidepressants is one of the most effective therapies in terms of suppressing REM sleep. However, the mode of action of these medications can also impact cognitive performance: REM sleep phases serve to firmly etch our remembrances in our long-term memories and thereby promote procedural learning abilities. This pertains in particular to automated learning processes such as the ability to play a piano or ride a bicycle.

Previous studies have shown that persons suffering from depression may experience procedural learning disabilities and are also at higher risk for cognitive disorders or dementia. Are these symptoms an expression of the disease itself, or are they elicited by the antidepressants? The working group headed by Privatdozent Dr. Dieter Kunz from the Charité's Institute of Physiology has addressed this issue by carrying out an experimental study. Before going to bed, 25 healthy participants were asked to memorize visual patterns. They then received either a placebo or amitriptyline (antidepressant drug). Their ability to retain the memorized patterns was tested the following evening; the obtained results demonstrated that study subjects receiving a placebo were significantly faster in their ability to recall the patterns, than were those who had taken amitriptyline.


"Our findings suggest that the antidepressant amitriptyline can also contribute to cognitive impairment in depressed patients. The introduction of psychoactive substances into the complicated sleep processes can cause numerous known side effects such as cognitive deficits, weight gain and early morning apathy", according to sleep researcher Dr. Kunz. He went on to say: "We recommend that new substances now be developed that improve the quality of sleep of depressed individuals, rather than solely for the purpose of treating their symptoms during waking hours."

*Goerke M, Cohrs S, Rodenbeck A, Kunz D. Differential effect of an anticholinergic antidepressant on sleep – dependent memory consolidation. *Sleep* 2014 May 01. Doi: 10.5665/sleep.3674

Links:

[Working Group Sleep Disorders and Clinical Chronobiology](#)

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