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World

UK

England

Northern Ireland

Scotland

Wales

Business

Politics

Health

Medical notes

Education

Science & Environment

Technology

Entertainment

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Video and Audio

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Magazine

In Pictures

Country Profiles

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Problems are solved by sleeping

Sleeping on a problem really can help solve it, say scientists who found a dreamy nap boosts creative powers.



Sleep is important for assimilating new information

They tested whether "incubating" a problem allowed a flash of insight, and found it did, especially when people entered a phase of sleep known as REM.

Volunteers who had entered REM or rapid eye movement sleep - when most dreams occur - were then better able to solve a new problem with lateral thinking.

Proceedings of the National Academy of Sciences has published the US work.

In the morning of the test day, 77 volunteers were given a series of creative problems to solve and were told to mull over the problem until the afternoon either by resting but staying awake or by taking a nap monitored by the scientists.

“ We propose that REM sleep is important for assimilating new information into past experience to create a richer network of associations for future use ”
The study authors

Compared with quiet rest and non-REM sleep, REM sleep increased the chances of success on the problem-solving task.

The study at the University of California San Diego showed that the volunteers who entered REM during sleep improved their creative problem solving ability by almost 40%.

The findings suggest it is not merely sleep itself, or the passage of time, that is important for the problem solving, but the quality of sleep.

Lead researcher Professor Sara Mednick said: "We found that, for creative problems you've already been working on, the passage of time is enough to find solutions.

"However for new problems, only REM sleep enhances creativity."

The researchers believe REM sleep allows the brain to form new nerve connections without the interference of other thought pathways that occur when we are awake or in non-dream-state sleep.

"We propose that REM sleep is important for assimilating new information into past experience to create a richer network of associations for future use," they told PNAS.

Dr Malcolm von Schantz of the Surrey Sleep Research Centre at the University of Surrey said: "Whatever the importance of the dreams themselves are, this paper confirms the importance of REM sleep, the sleep stage when most of our dreaming takes place."

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