Getting too little sleep triggers the same response in your brain as smoking marijuana

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Introduction

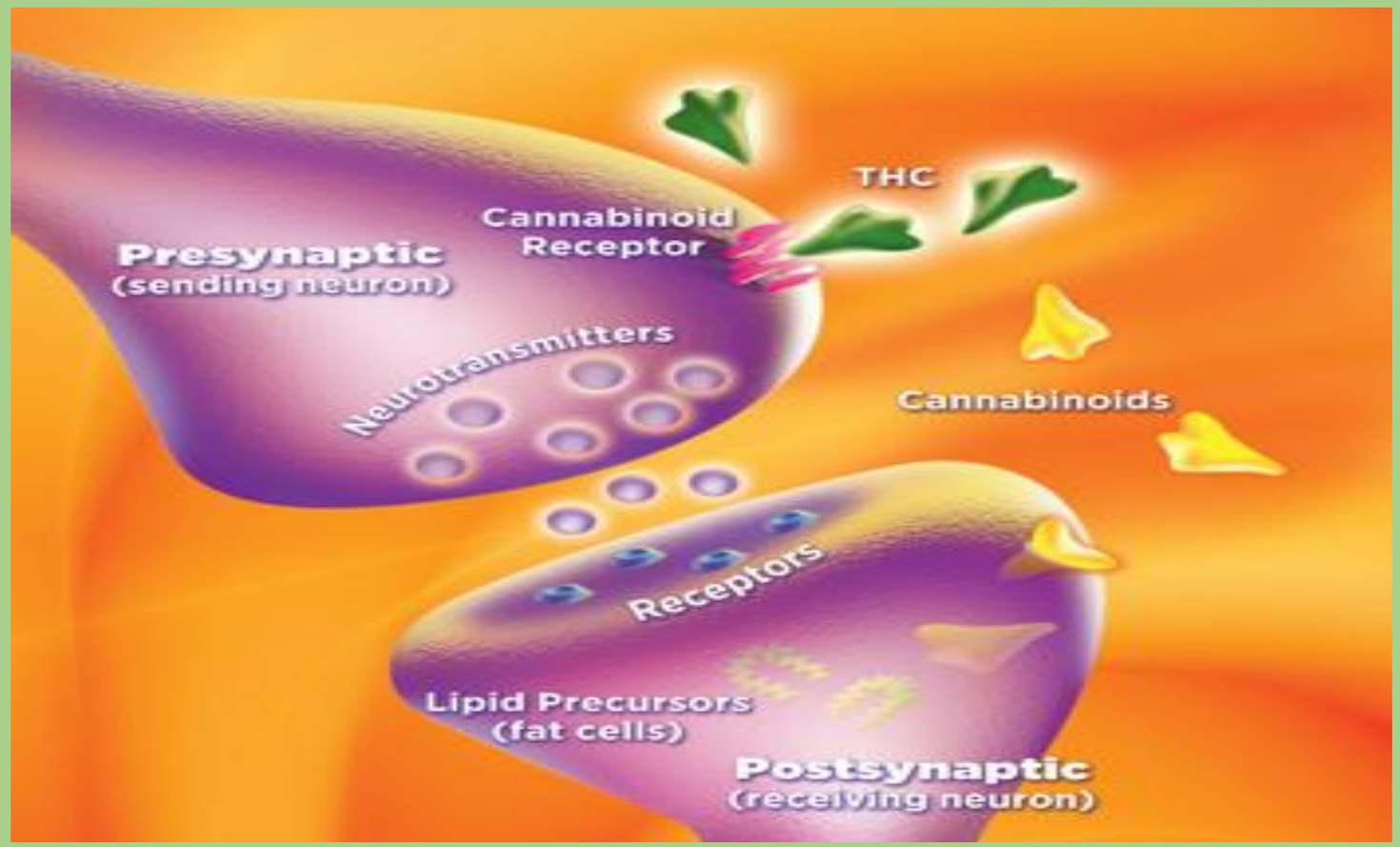
The goal of this poster is to show how lack of sleep can affect our appetite, and the similarities between the feeling of hunger caused by the consumption of marijuana (chemical hunger) and the feeling of hunger caused by the lack of sleep.

Results

Studies link sleep deprivation in humans to an increase in certain molecules in the endocannabinoid system, a complex network of neurotransmitters and receptors that, among other things, are influenced by marijuana. Studies in mice have shown that this system affects how the brain processes odors, making food more inviting.

Relevance of the study

This study can be useful to people who are following a diet or to people with diabetes, because it is found that you have more cravings for sweet foods when you don't sleep. It is also easier to understand the cause of the munchies (chemical hunger) due to cannabis use.



Brain cells (neurons) communicate with each other and with the rest of the body by sending chemical “messages.” These messages help coordinate and regulate everything we feel, think, and do. Typically, the chemicals (called **neurotransmitters**) are released from a neuron (a presynaptic cell), travel across a small gap (the synapse), and then attach to specific receptors located on a nearby neuron (postsynaptic cell). But the EC system communicates its messages in a different way because it works “backward.” When the postsynaptic neuron is activated, cannabinoids (chemical messengers of the EC system) are made “on demand” from lipid precursors (fat cells) already present in the neuron. Then they are released from that cell and travel backward to the presynaptic neuron, where they attach to cannabinoid receptors. When a person smokes marijuana, THC overwhelms the EC system, quickly attaching to cannabinoid receptors throughout the brain and body.

Sources:
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