APA Chapter 4

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1. **What happens to the blood flow to the brain when one uses marijuana?**
2. **How is cognitive performance affected by heavily using the drug?**
3. **How long is long enough for "light users" to restore cognitive performance?**
4. **According to the articles, how were “heavy user”, “moderate user”, and “light user” operationalized?**
5. **What is the name of the (possible) alternative drug to marijuana?**
6. **What does this drug do to endocannabinoids? And as a result, what could this alternative drug help treat?**
	1. Marijuana refers to the product obtained after drying the leaves, flowers, stems, and seeds of the Cannabis Indica plant. The plant contains the mind-altering chemical THC and other chemical substances, similar in nature. Currently, Marijuana is the most commonly used illicit drug all over the United States of America. Most of the people who use marijuana range between the ages of 18 to 25 years.

Experts, scientists, and medical practitioners have been conducting experiments on the various aspects of the drug to find out its various effects on the human body, and whether it can be used for some beneficial purpose or not. A study was conducted recently by the National Institute of Drug Abuse in Baltimore, MD regarding the effects of marijuana on the human body. It included 54 individuals who use marijuana regularly and a group of control individuals who never used marijuana. This study revealed that the blood flow in the users of marijuana was much higher as compared to the blood flow of the people who never used marijuana (American Academy of Neurology 2005, February 13). Even after abstaining from the usage of the drug, the results regarding the blood flow remained the same in the drug users.

* 1. The use of Marijuana can also have a deep impact on the cognitive functioning of the brain as well. Research has proved that a heavy and continued use of marijuana can have a long-term effect on the brain of an individual and alter the cognitive abilities permanently. Cannabis has been proved to cause a decline in the cognitive abilities of a person, including difficulty in thinking and decision making.

However, there is a group of researchers that disagrees with these results. They hold the stance that using marijuana does not have any effect on the cognitive abilities of an individual. Some of the scientists even think that moderate use of the drug may cause the brain to function in a better way.

* 1. As many studies and pieces of research have proven that the use of Cannabis has a long-term effect on the cognitive abilities of an individual, scientists are still struggling to find out that how much the amount or quantity of the drug is enough not to alter with the normal neuro function of the human body. Scientists have found out, so far, that the heavy usage of the drug cause permanent damage to the thinking ability and the decision-making capability of an individual but its effects can be mitigated by the decreasing or curbing the use of the drug in the user. It has been found out after thorough research and study that the cognitive abilities can be restored in the marijuana users by keeping the drug away for almost a month; but these results are only valid for the light users of marijuana.
	2. The users of any drug are categorized broadly in three categories; heavy users, medium users, and light users. Similar is the case with marijuana or cannabis. Heavy users of marijuana are those individuals who use the drug on a very regular basis, in fact to a dangerous level. Medium users of marijuana refer to that category of users that consume the drug at a moderate level, not too much not very light. Whereas the light user rarely uses the drug. The pulsatility index (PI) of the moderate and light users were found to be improving with time during the month of abstinence whereas no difference was found in the heavy users, even in the month of abstinence.
	3. Marijuana has been found to be extremely beneficial for human health (apart from its harmful effects) and its effectiveness has been proven in the medical field to cure various medical ailments. The symptoms of these diseases include pain, nausea, migraine, glaucoma, and weight loss. Although its effectiveness has been proven through various experiments, the doctors and scientists recommend not using the drug and moving towards the alternatives of marijuana, which are much healthier and less harmful in nature. These alternatives include edible marijuana, vaporizers, and multiple herbs like Kava Kava, Valerian Root, Ginger, Turmeric and Black Pepper and Coneflower (Echinacea). These alternatives can be used in order to cure the symptoms of those numerous diseases that are usually cured by the use of marijuana, but with much lesser harmful effects. These alternatives are much effective than marijuana and much less harmful to the body. These alternatives are even healthy and prove beneficial for the body for example ginger.
	4. Endocannabinoid system (ECS) is a biological system that is made up of endocannabinoids. These are endogenous lipid-based retrograde neurotransmitters that bind to the cannabinoid transmitters and receptors. Cannabinoid receptors are the proteins that are present all over the vertebrate central nervous system, including the brain and peripheral nervous system. Endocannabinoid receptors are also found all over the body, in the brain, glands, connective tissues, organs, and immune cells, and are extremely important in proper maintenance of the health (Alger, 2013, November). The chemical found in marijuana, TCH, not only affects the central nervous system or the brain but the whole body. It especially attacks the immune system and weakens it to the extent that it can no longer fight against the viruses or bacteria that cause various diseases in the body. In contrast to this, such is not the case with the alternatives to marijuana. The alternatives of marijuana are not that much harmful or not harmful at all and preserve and protect the endocannabinoid receptors.

**References**

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