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Effects of Caffeine on Memory, Feelings, Alertness, and Other Brain Functions a New Suggestion for Stroke Patients

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Background and Aim: A stroke is a medical condition in which poor blood flow to the brain results in cell death leading in parts of the brain not functioning properly so patient suffer many consequences. Caffeine is from methyl-xanthine family and is found in products such as tea and coffee. Among brain stimulants, it is most commonly used. Caffeine is an antagonist of adenosine receptors and protects the nervous system. It has different effects on brain function in different doses. Majority of psychopharmacological studies have used pure caffeine tablets or drinks with doses in excess of those normally consumed in daily life to find these effects.
This study has evaluated the effects of caffeine on memory, response speed and other effects on the brain and different doses.
Materials and Methods: We performed a systematic review of the literature with related keywords in PubMed, Science direct and Google scholar to gather information in articles published since 2008 and summarized here.
Results: 1. Caffeine increases the reaction speed in the processing of visual information.
2. The speed of response in problem-solving skills was also enhanced.
3. These improvements in performance were accompanied by increased feelings of alertness, attentiveness, and clear-headedness.
4. The caffeine had reduced the individual differences in attentional performance. Caffeine and similar drugs (e.g. nicotine) reduce the normal fluctuations in stimulation.
5. Caffeine can enhance the functioning of the cholinergic pathway, giving a mechanism for the improved attention and faster reaction times.
6. It is known that caffeine blocks adenosine receptors throughout the body, which results in the same effect as nicotine.
7. Caffeine reverses impaired cognitive function caused by sleep deprivation.
8. Caffeine at low doses increases the memory retention but decreases at high doses.
9. Caffeine strengthens memory and improves amnesia caused by aging and medication.
10. Drinking coffee is associated with a reduced stroke risk
Conclusion: The effect of caffeine in the brain and behavioral systems is dose-dependent. Generally, taking caffeine daily can improve the learning process and reduce memory damage caused by sleep disorders, aging, stroke, etc. Caffeine also helps having faster reactions and be more alert and attentive especially in stroke patients.