



ORIGINAL RESEARCH PAPER

Prosthodontics

MASTICATION: A VISION - IN NEW DIMENSION

KEY WORDS: Body fluid ,CSF, Bacterial, Viral, Cryptococci, Meningitis

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ABSTRACT

Recent studies have showed that mastication which is an initial process in the digestive system, is also important to maintain cognitive functions in the hippocampus, a central nervous system region vital for spatial memory and learning. This paper is a flash review of few investigations that dictates the relationship between masticatory capacity and age-related cognitive impairment.

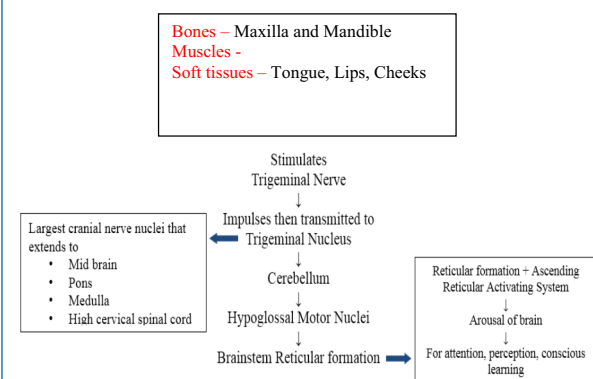
Mastication (chewing) is the process by which food is crushed and ground by teeth. It is important for food intake and thereby helps in preserving and promoting the general health. Human and animal studies indicated that cognitive functioning is also influenced by mastication.

Cognition is 'the mental action or process of acquiring knowledge and understanding through thought, experience and the senses. Cognitive functions are regulated by the hippocampus, a central nervous system region vital for spatial memory and learning. Mastication is considered as an effective behavior for maintaining the hippocampus-dependent cognitive performance, which deteriorates with aging.

Masticatory dysfunction can thus be considered as a risk factor in cognitive dysfunction, associated with the hippocampal morphological impairments and the hippocampus-dependent spatial memory deficits, especially in elderly. Cognitive dysfunction is a category of mental health disorders that primarily affect learning, memory, perception and problem solving, and include amnesia, dementia and delirium.

There are multiple neural circuits connecting the masticatory organs and the hippocampus

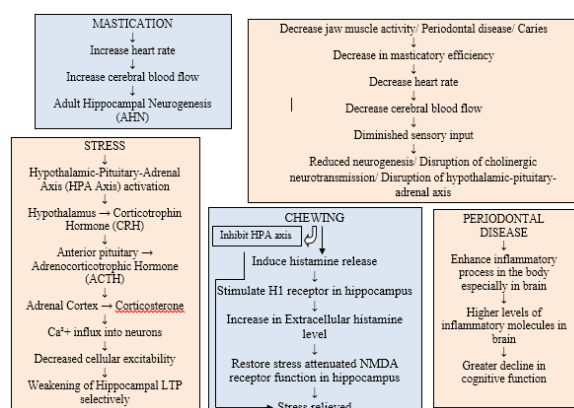
Activated Masticatory components



These impulses terminates in somato sensory cortex There the reciprocal projection with somato sensory association stimulates entorhinal cortex activation of Dentate Gyrae (DG) - - - promotes Neurogenesis

Neurogenesis occurs in Sub granular zone of DG, forebrain sub ventricular zone throughout life

A brief review on other possible mechanisms involved in the interaction between mastication and the hippocampal neurogenesis



CONCLUSION

Future directions of this unique fascinating research are numerous. Masticatory stimulation that is beneficial for hippocampal functioning is to be studied further. More information on how the multiplicity of substrates, neurotransmitter systems and genes interact with one another to modulate the interaction between mastication and hippocampal function are also required. The relationship between age - related decline in cognitive function and mastication should also be resolved. Dental treatment at early phases to restore masticatory efficiency thus, has a great part in the play to maintain cognitive functions.

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