

## عنوان مقاله:

Protective Effects of N-Acetylcysteine on Dipentyl Phthalate Induced Cognitive Dysfunction and Brain Oxidative Stress in Mice

## محل انتشار:

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## خلاصه مقاله:

Background: Dipentyl phthalate (DPeP) is a plasticizer compound commonly used in polyvinylchloride plastic to enhance softness and flexibility. They are not bound covalently to plastic polymers; therefore, they can dissolve into the environment and adversely affect the health of humans and animals. Objectives: The aim of this study was to investigate the effect of DPeP on cognition and protective effects of N-acetylcysteine (NAC) on DPeP induced alteration in cognitive behaviour and oxidative stress markers in mice. Methods: Mice were orally treated with 2 doses (33 mg/kg and 100 mg/kg) of DPeP for 28 days. Cognitive functions were assessed using spatial navigation tasks on the Morris water maze and the step-down latency in the passive avoidance apparatus. Oxidative stress was assessed by examining the levels of malondialdehyde, glutathione, ferric reducing antioxidant power, and 8-hydroxy-deoxyguanosine levels in the whole brain of mice. Results: There was a significant increase in latency in spatial navigation tasks and a significant decline in the step-down latency in passive avoidance apparatus in the DPeP-treated group compared to the control groups. There was also a significant increase in the levels of oxidative stress following DPeP administration as seen with the rise in the levels of malondialdehyde, 8-hydroxy-deoxyguanosine, and a fall in glutathione and ferric reducing antioxidant power levels. Conclusion: The present study demonstrated that DPeP adversely affects learning and memory functions in mice by oxidative stress-mediated neuronal damage. These effects were attenuated by pretreatment with N-acetylcysteine

## کلمات کلیدی:

Phthalate, Oxidative stress, N-acetylcysteine, Reactive oxygen species

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