

## عنوان مقاله:

Exposure of Healthy Adult Male Rats to Dust Storm Impairs Cognition, Anxiety, Locomotion and Depression-like Behaviors by Stimulation of Brain Neuroinflammation and Oxidative Stress

## محل انتشار:

مجله دانشگاه علوم پزشکی کرمان، دوره 29، شماره 5 (سال: 1401)

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## خلاصه مقاله:

Background: T Exposure of normal subjects to dust storm (DS) with different doses of ambient air-borne dusty

particulate matter (PM) causes memory and locomotion impairment, anxiety and depression-like behaviors. This study was designed to investigate the effect of sub-chronic exposure to DS with inhalation of ambient PM in a designed special chamber on cognition, anxiety, depression, locomotion behaviors, brain tissue inflammatory cytokines and antioxidant indices in healthy adult rats. Methods: Adult male Wistar rats (250-300 g) were divided randomly into the 4 groups: Sham (clean air, contains the least dusty PM < 150 µg/m<sup>3</sup>), DS<sub>1</sub> (200-500 µg/m<sup>3</sup> PM), DS<sub>2</sub> (500-2000 µg/m<sup>3</sup> PM) and DS<sub>3</sub> (2000- 8000 µg/m<sup>3</sup> PM). Rats were exposed to the clean air or different sizes and concentrations of PM in DS during the first 4 consecutive days of each week in an experimental actual-ambient dust exposure chamber. Results: Sub-chronic exposing to dust storm PM impaired avoidance memory and locomotion, increased anxiety and depression like behaviors. These disturbances were in line with increased levels of inflammatory cytokines in brain tissue and suppressing the antioxidant indexes. Conclusion: Current findings indicated that exposure to ambient PM due to DS caused cognitive, anxiety, depression-like and locomotion behaviors impairment by increasing the neuroinflammatory responses and suppressing the antioxidant indexes in the brain

### کلمات کلیدی:

Dust storm PM, cognition, Locomotion, Anxiety, depression, Inflammation, Antioxidant indexes

### لینک ثابت مقاله در پایگاه سیویلیکا:

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