

Road rage: Fuel vapor heightens aggression

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Outrageous prices may not be the only thing causing anger at the petrol pumps. A new study, published in the open access journal *BMC Physiology*, has shown that rats exposed to fumes from leaded and unleaded gasoline become more aggressive.

Amal Kinawy, from Cairo University, Egypt, examined the emotionally incendiary properties of gasoline in three groups of male rats, each exposed to either leaded-gas fumes, unleaded-gas fumes or clean air. As well as observing the animals' behavior, she studied any resulting neurological and physiological changes. She said, "Millions of people every day are exposed to gasoline fumes while refuelling their cars. Exposure can also come from exhaust fumes and, particularly in the developing world, deliberate gasoline sniffing as a means of getting high".

The research demonstrates that rats exposed to either kind of fuel vapor showed increased aggressive behavior, such as more time spent in belligerent postures and increased numbers of actual attacks, in comparison to the clean air group. Examination of the animals' brains after the experiment revealed significant differences between all three groups. According to Kinawy, "Rats exposed to unleaded gasoline showed indications of increased damage caused by [free radicals](#) and altered levels of neurotransmitters in the brain cortex region, in comparison with the control or leaded gasoline groups. Furthermore, inhalation of both fuels induced significant fluctuations in neurotransmitters in the hypothalamus, hippocampus and cerebellum".

Kinawy concludes, "Heightened [aggression](#) may be yet another risk for the human population chronically exposed to urban air polluted by automobile smoke".

More information: Impact of [gasoline](#) inhalation on some neurobehavioural characteristics of male rats, Amal A Kinawy, *BMC Physiology* (in press), www.biomedcentral.com/bmcphysiol/

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