# Molecular hydrogen as therapeutic medical gas for nervous disease

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Molecular hydrogen has a strong prospect for clinical use due to easy preparation, low-cost, and no side effects. The present study investigated the effects of hydrogen gas on blast-induced mild traumatic brain injury (bmTBI) model in mice. Although the clinical presentation of bmTBI is not precisely defined, it is frequently associated with psycho-neurological deficits and usually manifests in the form of poly-trauma including psychiatric morbidity and cognitive disruption. The underlying mechanisms of bmTBI are largely unknown, but some studies suggested that bmTBI is associated with BBB disruption, oxidative stress, and edema in the brain. In our model, the administration of hydrogen gas significantly attenuated the behavioral deficits, suggesting that hydrogen application might be a strong therapeutic method for treatment of nerve diseases.