

# Abstract

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## Pilot controlled trial of d-serine for the treatment of post-traumatic stress disorder.

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**OBJECTIVE:** Enhancement of neurotransmission mediated at N-methyl-d-aspartate subtype of glutamate receptors (NMDAR) may be beneficial in post-traumatic stress disorder (PTSD). d-serine (DSR) is an endogenous full agonist at the NMDAR-associated glycine modulatory site.

**METHODS:** Twenty-two chronic PTSD outpatients were randomly assigned to participate in a 6-wk double-blind, placebo-controlled, crossover trial with 30 mg/kg.d DSR used as monotherapy or add-on pharmacotherapy. Outcome was assessed using the Clinician-Administered PTSD scale (CAPS), Hamilton Anxiety (HAMA) and Depression (HAMD) scales and the civilian version of the Mississippi Scale for Combat-Related PTSD (MISS).

**RESULTS:** DSR treatment was well tolerated and resulted in significantly ( $p=0.03$ ) increased DSR serum levels. Compared with placebo administration, DSR treatment resulted in significantly reduced HAMA ( $p=0.007$ ) and MISS ( $p=0.001$ ) scores and a trend ( $p=0.07$ ) towards improved CAPS total scores.

**CONCLUSION:** These preliminary findings indicate that NMDAR glycine site-based pharmacotherapy may be effective in PTSD and warrant larger-sized clinical trials with optimized DSR dosages.

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