Effects of HIV-1 TAT protein and methamphetamine exposure on visual discrimination and executive function in mice.

James P. Kesby[1,2*], Jerel A. Fields[1], Ariel Chang[1], Hamza Coban[1], Cristian L. Achim[1], Svetlana Semenova[1], and the TMARC Group.

[1]Department of Psychiatry, School of Medicine, University of California San Diego, La Jolla, CA, USA.

[2]Queensland Brain Institute, The University of Queensland, St. Lucia, Qld, Australia.

Running Title: TAT, METH and learning/executive function

* Corresponding author:

Dr. James Kesby (ORCID: 0000-0002-5814-8062),

Queensland Brain Institute,

The University of Queensland,

Brisbane, QLD 4072, Australia.

Phone: +61 7 3346 6363

Fax: +61 7 3346 6301
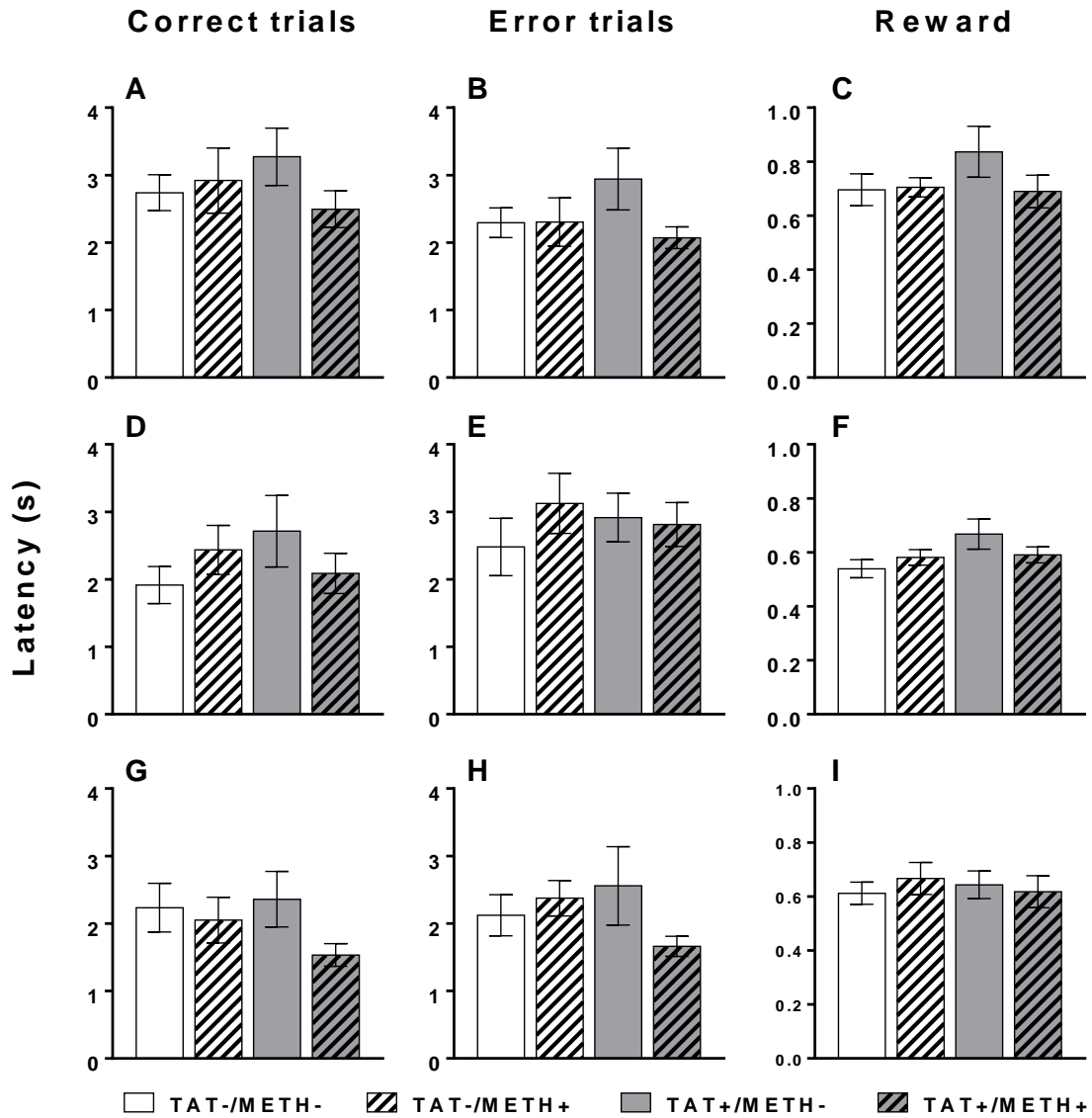
Email: j.kesby@uq.edu.au

Figure S1. Response latencies

Effects of TAT expression (TAT+) and/or methamphetamine exposure (METH+) on the latency to respond for correct trials (**A**, **D**, **G**), error trials (**B**, **E**, **F**) and reward collection (**C**, **F**, **I**), during visual discrimination (**top row; A-C**), strategy switch (**middle row; D-F**) and reversal learning (**bottom row; G-I**). Data are expressed as mean ± SEM.
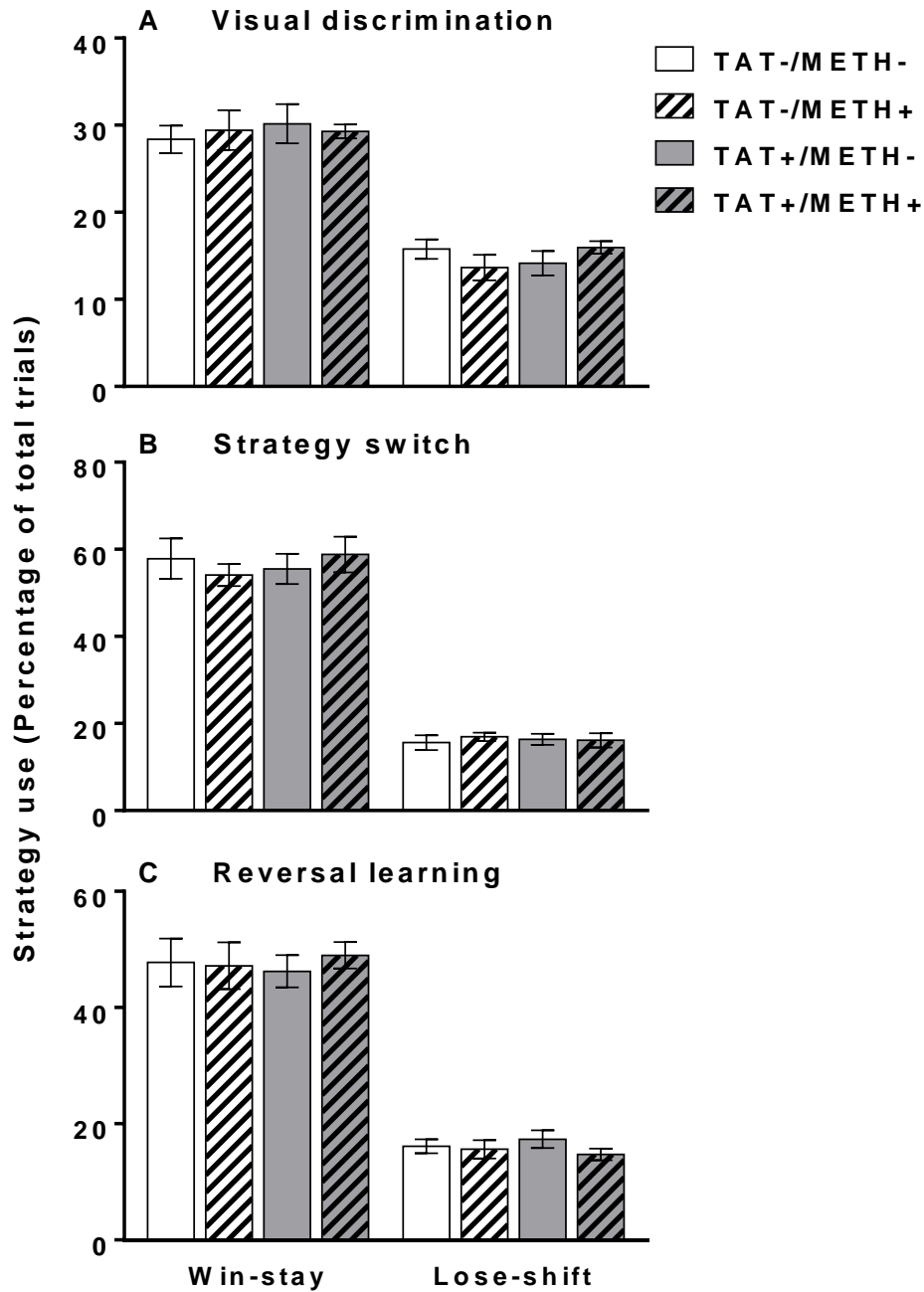
Figure S2. Strategy use

Effects of TAT expression (TAT+) and/or methamphetamine exposure (METH+) on win-stay/lose-shift strategy during visual discrimination (**A**), strategy switch (**B**) and reversal learning (**C**). Data are expressed as mean ± SEM.
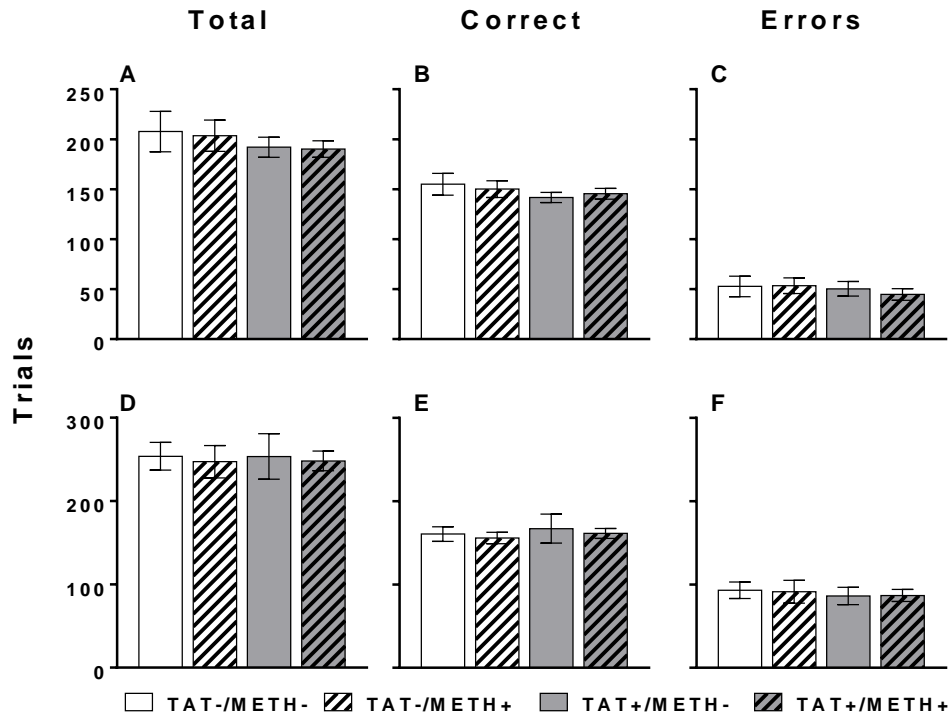
Figure S3. Trials to criterion

Effects of TAT expression (TAT+) and/or methamphetamine exposure (METH+) on the total (**A**, **D**), correct (**B**, **E**) and error (**C**, **F**) trials to criterion during the strategy switch (**top row; A-c**) and reversal learning (**bottom row; D-F**). Data are expressed as mean ± SEM.
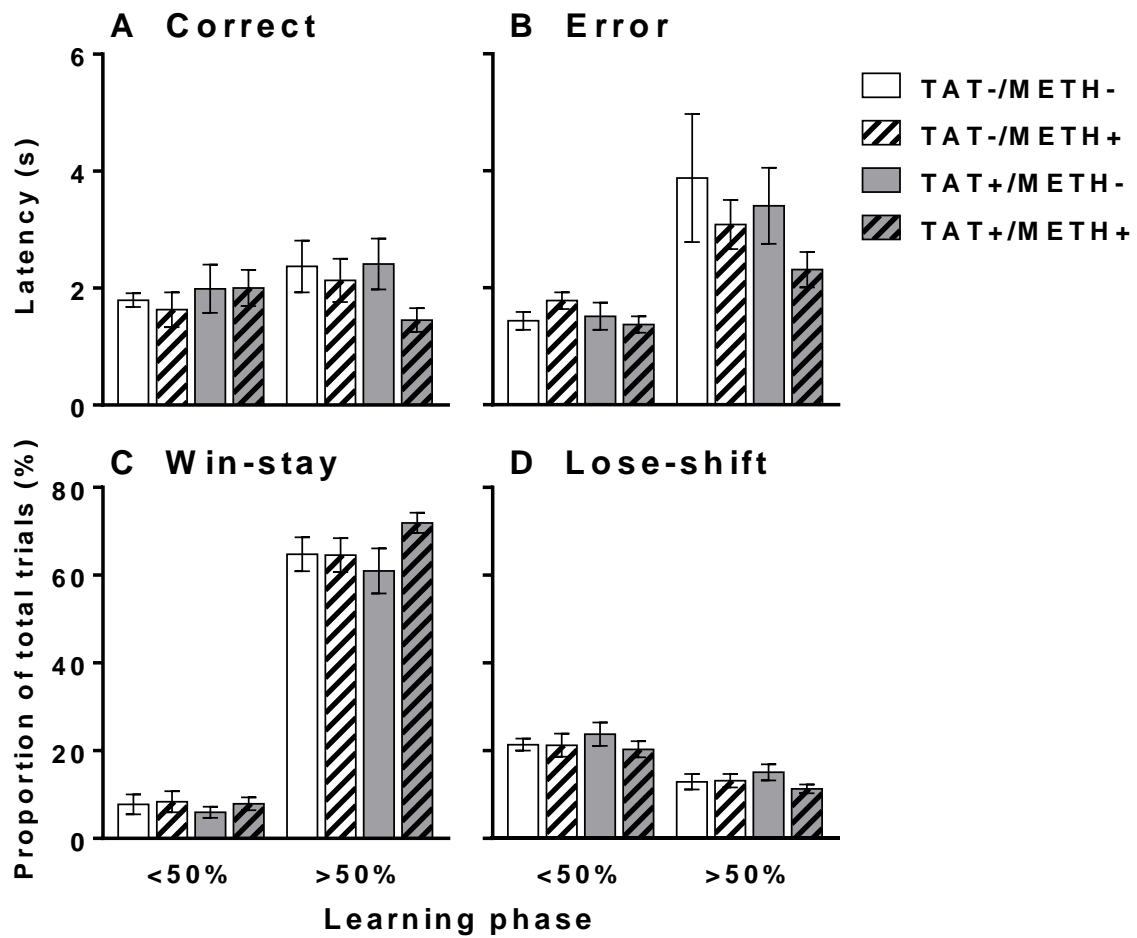
Figure S4. Early and late phase reversal learning

Effects of TAT expression (TAT+) and/or methamphetamine exposure (METH+) on the latency to respond for correct trials (**A**), latency to respond for error trials (**B**), win-stay strategy (**C**) and lose-shift strategy (**D**), during early (<50%) and late phase (>50%) reversal learning. Data are expressed as mean ± SEM.