

## S32-01 - DYSFUNCTION IN REWARD LEARNING AND THERAPEUTIC CONSEQUENCES

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Alcohol stimulates dopamine release and chronic intake is associated with neuroadaptation in the brain reward system. Previous studies described

- 1) increased brain activation following the presentation of alcohol-associated stimuli, which was directly correlated with dopamine D2 receptor reductions in the ventral striatum, and
- 2) a decreased response to stimuli that predict non-alcohol (e.g. monetary) rewards.

This alteration of brain responses to alcohol-associated versus non-alcohol cues may result from altered reward-associated learning in alcoholism. Indeed, alcohol-dependent patients displayed a decreased learning rate and performance in a probabilistic reversal task. A brain imaging study revealed that the decreased learning rate was associated with impaired prefrontal-striatal connectivity during reward-dependent reversal learning. These results point to deficits in reward-associated learning, which contribute to alcohol craving. Since such reward-associated learning deficits can interfere with learning of new, non-alcohol associated behavior, cognitive behavior therapy may profit from taking such learning speed impairments into account.