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**NEUROBIOLOGICAL BASIS OF ALCOHOL RELATED DISRUPTION OF THE ERROR MONITORING SYSTEM**

**M. Osain Welcome, V. Alekseevich Pereverzev**

*Belarusian State Medical University, Minsk, Belarus*

Following the discovery of the Error Related Negativity, ERN in the early 1990s, the field of event related brain potential research is gradually growing. The ERN in recent times has been related to the presence of a monitoring system in the basal ganglia. Ridderinkhof et al have showed that alcohol disrupts the error monitoring system. Although the way alcohol affects the error monitoring system is yet uncovered, Halroyd et al have noted that alcohol might either affect this system directly or indirectly by causing changes in the level of dopamine. This study reviews recent data that might explain the indirect effect of alcohol in the error monitoring system. The major findings in this study put into consideration some points stated in Ridderinkhof et al & Halroyd et al models, the fishbone model of blood-brain glucose metabolism. The magnitude of error commission is dependent on the mesencephalic dopamine system, anterior cingulate cortex activities, associated systems and the brain glucose concentration. This present literature analysis suggests that alcohol related disruption of the error monitoring system results from its metabolic effects on glucose metabolism, which in turn leads to changes in dopamine levels, subsequently affecting the activities of the anterior cingulate cortex, including associated systems.

**References**

1. Peters A et al. *Neurosci & Biobehav Rev* 28; 2004: 143-180
  2. Ridderinkhof KR et al. *Science* 298; 2002: 2209-2211
- Holroyd CB et al. *Trends in Neurosci* 26 (8); 2003: 402- 404