ABSTRACT BOOK OF Basic and Clinical

# 2nd NEURO SCIENCE Congress 2013

DECEMBER 18-20, 2013 Tehran, Iran

# Oral

# The effect of head orientation and emotional expression on gaze perception

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**Introduction**. Gaze behavior is an ostensive ability reflecting a lot of information about communicator's attention and intention that play a key role to develop social skills. In the present study we investigate how the emotion of anger and the head orientation will affect the gaze perception by the observer.

**Materials and Methods**. Participants were 10 master students of Shahed University who live on-campus. They were asked to make gaze judgment in images of an average man's face (dimensions: 26.18×25.47 cm image) processed by PhotoShop. Facial expressions in images showed two emotional states (normal and frowning) and two different directions of head (straight and turned).

Result. Results of ANOVA test for gaze perception indicated that the head orientations altered the center of the gaze cone ($p<0.001$) while the frown had no effect on either gaze direction or cone's width ($p>0.05$).

**Conclusion**. Eye gaze considering head orientation was judged differently. Moreover gaze perception was not sensitive to emotional sates of observer.

**Keywords**: Head orientation; Emotional expression; Gaze perception

# Effectiveness of Behavioral Inhibition Training in Prison Inmates with Attention Deficit/Hyperactivity Disorder

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**Introduction**. One of the symptoms of Attention Deficit Hyperactivity Disorder is an impaired ability to inhibit distracters. Previous research has indicated that cognitive training can lead to improvements in executive function-dependent tasks such as those involving working memory and inhibition. The aim of the present study was to test the outcomes of a series computerized training programs that was developed by the researchers for improving performance on working memory and inhibition tasks among prison inmates with ADHD.

**Materials and Methods**. Through randomized sampling method, 20 adult male prison inmates (22-41 years old) in

Gorgan State Prison (North of Iran), who had previously been diagnosed with ADHD, were recruited on a voluntary basis. Participants were randomly assigned to an experimental group who received a computerized behavioral inhibition training program for 25 sessions through 5 weeks, or to a passive control group. The training programs comprised 4 modified tasks related to behavioral inhibition: Go-No-Go task, stop signal task, number Stroop task, and Flanker Arrow task. Go-No-Go test, classic Stroop test, Stop Signal test, Digit Span from the Wechsler Adult Intelligence Scale, and Corsi Block Tapping task were used for pre- and post-training assessments of executive cognitive function.

**Results**. The experimental participants reported significant change ($p$<0.05) on verbal and nonverbal working memory tasks. But no significant change was reported on inhibition tasks ($p$>0.05).

**Conclusion**. The results suggest that behavioral inhibition training did not lead to improvement on inhibition tasks, but it had significant effects on working memory tasks. This finding may indicate that inhibition training can lead to improvements in controlled attention and thereby improve performance on the tasks that require controlled attention, but does not lead to positive outcomes on tasks that require automatic processes.

**Keywords**: Attention Deficit\Hyperactivity Disorder (ADHD); Behavioral Inhibition Training; Working Memory

# Mercury specifically induces mobile DNA element activity in human neuroblastoma cell line

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**Introduction**. Neurodegenerative disorders include big spectrum of diseases with some known and more unknown molecular etiology. However, researchers believe on the role of environmental factors including metal ions on etiology of neurodegenerative disorders. Some of these metals have been shown to have effects on frequency of L1 retrotransposition. L1 retrotransposons are the only mobile DNA elements, which preserve their activities in modern human. On the hand, activity of L1 elements is the source of inherited disorders and genomic instabilities. In this study we have tried to search for the effect of inducing L1 activities by neurotoxic heavy metals in neuroblastoma and connecting these activities to cell death.

**Materials and Methods**. We have used technics include cell-based transfection assay for L1 retrotransposition. Flowcytometry for L1 silencing, MTT assay for toxicity of metals, caspae 3 assay for apoptosis induction. propidium iodide test for cell cycle studies, qRT-PCR and western blot for endogenous L1 induction and luciferase assay for L1 promoter study.

**Results**. Our data showed that mercury in different concentrations could increase L1 retrotransposition, L1 RNA expression and L1 promoter activity just in neuroblastoma, not in non-neuronal cell lines. Cobalt could not change the frequency of L1 retrotransposition. However, it was able to increase L1 RNA expression in both neuronal and non-neuronal cell lines and increase general promoter a well as L1 promoter activity in non-neuronal cell lines. Mercury, cobalt, copper and iron could remove L1 silencing in dividing neuroblastoma. Whereas, just mercury was able to remove L1 silencing in non-dividing neuroblastoma.