

## Aminolevulinate dehydrogenase polymorphisms did not modified lead serum and memory relationship

<b>Title</b>	Aminolevulinate dehydrogenase polymorphisms did not modified lead serum and memory relationship
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<b>Abstract</b>	<p>BACKGROUND Lead accumulation in the blood widely known affecting the formation of heme and oxygen transport processes in vital organs, Leading to organ failure including the brain synapses. Lead affinity has been recognized influenced by constitutional genotype of aminolevulinate dehydrogenase (ALAD), which encodes for heme synthesis. This research aimed to determine the relationship between plumbum (Pb) and short term memory on each ALAD gene genotyping (ALAD 1-1, ALAD 1-2 or ALAD 2-2) in gas station workers. METHODS Seventy six probands from gas station workers were recruited to participate in this research. Each probands was carried out ALAD genotyping using polymerase chain reaction-restriction fragment length polymorphism (PCRRFLP) method, lead serum level using atomic absorbent spectrophotometer (AAS), and short term memory was measurement by intelligence structure test (IST). RESULTS Proportion of ALAD 1-1, 1-2, and 2-2 were 91.8%, 8.2% and 0% respectively. Lead serum showed 15.84 ppb in homozygous 1-1, and 20.79 ppb in heterozygous. Short term memory in the probands varied from 85 until 117, with average in 99.71. There was significant negative relationship between lead serum and short term memory (<math>r=-0.24</math>; <math>p=0.038</math>). However, we could not find any significant correlation in each ALAD genotypes. CONCLUSION The ALAD genotypes did not modified the relationship between serum lead level and short term memory in gas station workers.</p>
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