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Background: Anesthesia may induce neurotoxic effects on developing brains. This issue is important in children because their learning abilities and intellectual functions are vulnerable in the developmental period. Our objective is to assess increase of learning disorders in children 7 to 10 years due to anesthesia.

Methods: In this study, 36 healthy children 7 to 10 years were selected for elective anesthesia. Pre-operative evaluation is done by assessment of Learning Disability Evaluation Scale - Renormed Second Edition (LDES-R2). One week after surgery, the same form is completed again as an interview. Results are analyzed using different statistical tests, i.e. paired t-test, Pearson correlation and independent t-test, in statistical software (SPSS20).

Results: After analyzing the results, we noticed that average level of learning disorders has increased significantly after anesthesia in different area of learning. It is shown that duration of anesthesia and recovery has a significant relationship in different ages. Only Listening is not effected significantly with age. Also, the relationship between sex and learning disability in two areas of thinking and speaking is more significant in girls than boys.

Conclusions: In the prospective study of children 7 to 10 years who were undergoing general anesthesia, it is shown that learning disorder score increases a week after the operation, especially in thinking abilities. This disorder is associated with age, sex, duration of anesthesia and recovery. We also show that the environmental conditions can have an impact.

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