

**Original Research Article**

# Effect of electronic gadgets on cognitive milestones of children below 2 years of age

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## Abstract

The purpose of this research was to determine the effect of electronic gadgets on cognitive milestones of children below 2 years of age. While conducting the research methods used were, 100 children of age group 6 months - 2 years were taken and divided in 2 groups - group 1 included 25 children of normal milestones up to 2 years. Group 2 included 75 children who attained normal milestones according to their age and then they were introduced with electronic gadgets (mostly mobile /play games) at different age. For minimum of 4-5 hours a day. Children were followed up at 2 months interval up to 2 years. The result of the study showed, Group 1 children attained normal milestones – physical as well as cognitive up to 2 years of age; While Group 2 children who were introduced electronic gadgets, 63 children attained normal physical milestones as well as cognitive milestones, but 12 of them had developed delayed cognitive milestones with normal physical milestones. Out of these 12 children, 5 of them had more impact of electronic gadgets i.e. they had shown delayed or regression of cognitive milestones. Overall the research concluded that, Electronic gadgets do affect the cognitive milestones of children from 6 months onwards.

## Key words

Cognitive Milestones, Physical Milestones, OAE Test (auditory).

## Introduction

The present paper aimed to consolidate and integrate some of the key empirical evidence that has emerged regarding the association between

the smartphone technology and cognitive functioning.

In this we examine evidence relating to both the acute consequences of media technology use on

the performance of ongoing cognitive tasks, as well as the relationship that may exist between technology usage habits and their cognitive ability.

To give the present review some focus, we begin with the premise that smartphone are, especially impactful technological development, due to their flexibility of functions and portability [9].

Touchscreen devices offer contingent audiovisual sensory stimulation based on a child's physical interaction. The variety, frequency and complexity of the contingent responses the child can get from tablets, smartphones and other touchscreen devices far exceeds anything a traditional physical toy can provide and may generate heightened levels of cognitive activity. Infants seem to be able to learn to tap and flick a screen before they have fully developed fine motor control [3].

This combination of interactions with varied sensory and cognitive stimulations may have the potential to have positive or negative impacts on attention, fine motor Control and other cognitive Domains [1, 2, 4-6].

Normally it has been seen that after 6 months of age most of the babies responds well to visual and auditory response [7, 8, 10].

### **Aim and objectives**

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- To know the effect of electronic gadgets over the cognitive development of children in modern era.

### **Materials and methods**

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This was a prospective study done at Rama Medical College, Ghaziabad for 1 year.

Total 100 babies in the age group of 6 months to 2 years were included in the study. History of milestones was taken from parents of healthy babies with complete vaccination according to the age.

History of birth asphyxia, convulsions and prolonged illness after birth were excluded from the study.

Babies were normal up to the age of 6 months in both the groups in terms of physical and cognitive milestones.

Group 1 babies responded well with visual and auditory response and weaning was also started at 6 months of age. (Total of 25 babies in this control group)

Group 2 babies also responded well to visual and auditory response, But Parents of this group had introduced any type of Electronic Gadgets (tablets /or smartphones / i-pads) to their babies for playing or to involve them at the time of feeding, to feed them easily for a minimum of 4-5 hours in a day. Time of introduction of different type of electronic gadgets was different in terms of age on the babies.

Weaning was started at 6 months of age in both the groups.

### **Results**

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A total of 100 babies were studied, out of which 62 were males, whereas 38 were female. Group 1 included 25 babies in this control group while group 2 had 75 babies on which effect of use of electronic gadgets was observed. The present study showed that total of 18 babies in group 2 was having delayed cognitive milestones. Out of 18 babies 5 babies of age group of 1-2 years were much more involved (in terms of delayed cognitive milestones) and they became very irritable after withdrawing the gadget from them. Further in this group of 18 babies we gradually withdrew the electronic gadgets and finally total absence of electronic gadgets. Follow-up was done at 2 months interval for this group of 18 babies who showed gradual improvement in terms of cognitive milestones.

### **Discussion**

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The study material showed that normal healthy babies were having normal physical and cognitive milestones, however babies who were introduced electronic gadgets after age group of 6 months, and cognitive milestones were delayed in 18 babies. Out of 18 babies 5 babies were more involved i.e. more irritable and cognitive milestones delayed markedly, thus proving that electronic gadgets have untoward effect on the growth of healthy babies.

Our study did not include the exposure of electronic gadgets on babies for less than 4 hours a day, so it is difficult to analyse the effect of electronic gadgets on cognitive milestones.

### **Conclusion**

The present study shows that Electronic gadget has a marked effect on the cognitive milestones of children below 2 years of age, if the gadgets are used for more than 4-5 hours a day.

Since, our study did not include children above 2 years of age, so it is difficult to conclude the effect of gadgets on this category of children.

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