

# Media Saturation Undermines Child Development and Parent-Child Relationship

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## Japan, a Human Experiment Country

How are physical and emotional development and communication skills of children raised in an environment saturated by media distorted and delayed? This is currently being tested on children in Japan—a ‘human experiment’ without precedent in mankind’s history.

Over the past five decades, we Japanese have pursued wealth and steadily surrounded ourselves with a comfortable and convenient living environment. The development of electronic audiovisual equipment such as televisions, videos, electronic games, computers and mobile phones has brought greater diversity to our daily lives. However, at the same time it has decisively destroyed and deprived of the conditions and environment needed for children in Japan to grow into ‘humane’ adults.

## World’s most “media saturated” culture

With every launch of a new video game, video, computer, mobile phone and other electronic visual media, children come into contact with media earlier in life and for longer hours in everyday life. More than half of Japan’s elementary and middle school students (ages 6 to 15) are exposed to electronic visual media for more than 6 hours a day on average (weekdays and weekends combined). This “media saturation” has reached levels unprecedented anywhere in the world.

In the international survey conducted in 2003 and 2007 by the International Association for the Evaluation of Educational Achievement (IEA), it was found that Japanese children have longer

exposure to television and video than children in any other country in both years. Moreover, computers and mobile phones have spread rapidly among children over the past few years, lengthening media exposure even further. Now, we should be most concerned about the children with “media addiction” and “Internet dependence” who are exposed to media for excessive amounts of time.

A study conducted in Tokorozawa City in Saitama Prefecture in 2007 found that students spend unbelievably long periods with electronic visual media—14 hours a day on weekends for the fifth grade elementary school students (ages 10–11), 17 hours for sixth grade elementary school students (ages 11–12), 18 hours for second year middle school students (ages 13–14), and 19 hours for third year middle school students (ages 14–15). Additionally, a 2008 survey on 700 second year middle school students in Tokyo City’s Bunkyo Ward found that 12% of these students had media exposure of over 10 hours on weekends. How far will the media exposure of Japanese children—already the highest in the world—continue to increase?

## “Media saturation” from infancy

The ‘premature exposure’ and ‘prolonged exposure’ of media appear to be fast progressing among children in infancy. This trend has accelerated since the 1990s, when the “TV generation,” those brought up with a television in the living room since birth, and the “game generation,” those brought up with video games, began raising their own children.

The breastfeeding period is supposed to be a critical period for baby’s brain circuit formation.

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Yet, over 70% of mothers watch television, videos and DVDs or type e-mails while breast-feeding their babies. These mothers are not concerned about rejecting eye contact with their babies and subjecting the baby's brain to the stimulus of harsh artificial beams and machine sounds. At ages 0–1 when babies cannot even verbalize a wish to watch television, they are placed in front of specific television shows and videos for long hours. This so-called “electronic babysitter” has become all too common sight.

The commercial strategies of companies who entice buyers with childrearing videos and early education videos for corporate profit are winning an overwhelming majority of young parents. Young fathers who buy video games for their babies or have them play with computers instead of toys are becoming more common.

Childrearing in the midst of “media saturation” from infancy not only has a directly negative effect on child development, but it also has dark implications for the formation of emotional bonds between parents and children. From infancy through high school, children in Japan now spend immense amounts of time alone in their rooms facing electronic visual media—more time than anywhere else in the world. Indeed, this represents a ‘human experiment’ never before attempted in the history of mankind.

## **Media Saturation and Child Development**

The effects of this ‘human experiment’ are already obvious. It is a failure to develop properly at many levels among children and young people—a “deterioration,” so to speak. During the period when the basic functions that make us human are being developed, children are raised in a media saturated environment, exposed to electronic visual media for extensive hours. In this section, we will look at the reality of this developmental failure, or “deterioration.”

### **Poor physical development**

When children are sitting in their rooms for long hours playing with electronic visual media, they do so by cutting down the time to play outside. This sharp decrease in opportunities to use legs and muscles leads directly to a poor development of the body. Indeed, the strength and athletic ability of Japanese children has been on the decline since the mid 1980s.

### **Weak legs**

The number of steps a child walks each day decreases as time spent with media in one's room increases. Modern-day children in Japan no longer walk much from infancy through the lower grades of elementary school—a crucial period for ‘leg’ development. Naturally, the decline in the number of steps walked has a major impact on the development of children's legs.

A study presented at the Japanese Society of Physical Fitness and Sports Medicine meeting by Professor Komei Ikuta of Osaka University in 2002 found that 50% of first grade elementary school students and 20% of sixth grade elementary school students (ages 6–7 and 11–12, respectively) had experienced a 2.6% shift backward (toward the heel) in the center of gravity when standing upright compared to 30 years ago. It was also found that the students did not press down on the floor with any of their 10 toes, either. These findings support that modern children have weaker legs.

Inability to continue standing for long periods of time, cannot walk for long distances, have a tendency to lose balance and fall easily, or does not have enough time to catch oneself with arms when falling and go down with the face first—all can be explained by a reduced level of leg development.

Japanese children's athletic skills, such as running, jumping, throwing, are also falling across the board. There is no doubt that this can also be attributed to the reduced development of legs and the lower body. The “media saturation” is causing the ‘deterioration’ of Japanese citizens' bodies in general, starting as early as infancy and in elementary school years.

### **Muscle strength at critical stage**

The development of muscle strength in the torso is extremely important for basic human activities such as physical labor, childbirth, childrearing, and care-giving. However, as with legs, our muscles do not develop properly if we do not use them. With the shift in households from “units of production” to “units of consumption,” children no longer use their physical strength to help family business. It is only natural that reduced time spent playing outside as a result of media saturation would lead to abnormalities in muscle development.

The Ministry of Education (currently the Ministry of Education, Culture, Sports, Science and

Technology, or MEXT) of Japan has conducted a nationwide survey on children's physical fitness and athletic ability since 1964. This survey included the "back strength index," which is children's back strength score divided by their weight, which has been declining ever since the survey first began. The Ministry decided to suspend this particular test, and the final back strength index test was carried out in 1997. The reason of termination, as unbelievable as it may sound, was that "many children hurt their lower backs from this test." I shall spare the detailed data here, but children's back strength have dropped to such extremely low levels that the test itself was becoming risky. The back strength of about half of all middle school students (ages 12–15) has now fallen to levels that raise the concern that childbirth, childrearing, and care-giving could result in back pain and strained backs.

#### **Poor eyesight**

Japanese children's eyesight began to deteriorate rapidly from the early 1970s when television spread nationwide. This trend has become even more severe as video games, computers and mobile phones proliferate and electronic visual media spreads. It is particularly interesting to look at the changes in the proportion of first year high school students (ages 15–16) in Tokyo with uncorrected vision of below 1.0 (equivalent of 6/6 in Europe or 20/20 in USA).

In the early 1960s, when television was just beginning to spread, just over 20% of children had uncorrected vision of less than 1.0. This figure increased to 50% for both boys and girls in 1988 when video games had become ubiquitous. By 2007, when computers and mobile phones had spread, Japan had reached the dire point that about 70% of children had uncorrected vision of less than 1.0—68.7% of boys and 75% of girls. This deterioration in vision is not just limited to Tokyo; the same trend has been present nationwide in the past 40 years.

In addition, undeveloped 'stereo vision' has also raised concern. A 'stereo vision' is an extremely important in sustaining human life as it protects the body from danger and allows people to catch game and perform manual labor. In the past, this type of vision was developed as children playing dynamically out in nature.

However, televisions, video games and computers all use flat screens and do not require such 'stereo vision.' During their adolescence when

vision is supposed to develop, children in Japan are spending long hours in front of flat screens of the television, videos, video games, and computers. This has resulted in lack of vision discrepancies between the left eye and the right eye, leading to poor 'stereo vision.'

The reports from schools about children who sprain their fingers in dodge ball games, get hit in the face in softball and volleyball games, and miss steps when climbing stairs, are steadily increasing. It shows that children who have problems with 'stereo vision' are becoming more and more common.

#### **Undeveloped autonomic nerves**

Once, there was a saying "kodomo ha kaze-no-ko (children belong with the winds)," meaning children should play outdoors in all weather. And now, their everyday life is saturated with media. This change has also resulted in abnormalities in the development of autonomic nerves, such as body temperature regulation and blood pressure regulation. Now about 10–30% of children in each class have body temperatures below 36.0°C in the morning, which was rarely seen in the 1920's to 1930's. Coming to school with inadequate body temperature can naturally affect the activity levels of brains and muscles of these children. It means that they are attending class without warming up their brains and muscles first.

#### **Five senses at risk**

Life in "media saturation" can lead to insufficient development or distortion of the five senses. Especially, the senses of touch, smell, and taste are not likely to develop properly at all.

#### **Immature communication skills**

When children watch television and videos and play video games, they face the screen alone and are barraged by one-way stimuli of lights and sounds. The longer children spend with media, the less time they spend interacting with family and friends. Thus, verbal exchanges become scarce. The earlier children are exposed to media in life, the more likely that the ability to communicate with real flesh-and-blood people becomes impaired.

The extent of one's verbal skill (spoken language) is determined by the number of opportunities the child has to voice words during the infancy, which is also called a period of vocalization. Spending long hours with media without

speaking to other people means verbal communication skills will develop only to a minimal level. This can result in a negative cycle in which children who are slow to acquire vocabulary and bad at interacting with other people retreat further into their media world, where no verbal communication is required.

During infancy, instead of using words, such children express themselves by lashing out, scratching, throwing their weight around, and letting out strange sounds. As they become older, they will express their feelings and thoughts by hitting and kicking, using clubs, blades, knives, bombs, or arson.

### Abnormalities in brain

Recent research on brain science has demonstrated that prolonged exposure to electronic visual media reduces the functions of the pre-frontal cortex, a portion of the cerebral cortex. The functions of the pre-frontal cortex include controlling emotions, regulating desires, empathy with others, and an ability to anticipate future—the very qualities that make us human. What happens to children with poor verbal skills when the brake function of their brains fails?

The increase in violence by children at school further corroborates the deterioration of the children raised in media saturation.

MEXT's Survey of Behavior Problems shows that violent behavior by school children are continuing to increase recently in elementary, middle and high schools. In fiscal year of 2007, a number of cases reached a record high of 52,756, up by 18% from the previous year. The sharp rise in the lower grades is particularly pronounced, with a 20% rise in middle schools and 37% in elementary schools. Children who behave violently because of "an inability to control their own feelings" and "low communication skills" are becoming conspicuous even in elementary schools.

### Cause of academic performance decline

Studies by the Japan Education and Technology Society have conclusively demonstrated that the longer a child's exposure to electronic visual media, the poorer their academic records. A nationwide study of academic ability and learning conditions conducted by MEXT in 2007 and 2008 made the same findings. For example, the group of middle school students (ages 12–15) who spent 1 hour or less on playing video games and using the

Internet on weekdays gave right answers to 74.9% of questions on the Japanese language class, while the group spending 4 hours or more was at 61.4%, showing a considerable discrepancy. In addition, middle school students who did not have mobile phones got 67.2% of the answers correct in math, whereas those who used mobile phones for e-mailing and other functions on a daily basis were at 60.5%; this difference was statistically significant.

Recently, the number of elementary and middle schools that participate in "no TV, no video games" and "out media" programs is rapidly increasing nationwide, and the academic performance of these schools is improving. This also verifies that there is a strong relationship between media exposure and academic performance.

### Media Saturation and Parent-Child Relationships

It is said that infancy represents the first stage in forming emotional attachments between parents and children, as mothers and fathers make eye contact with their children, talk directly to them, and have physical contact. However, currently some families are impeding this first critical stage by raising their children in a media-saturated environment.

As I mentioned in the first section, child-rearing began to change drastically in the 1990s, when the television generation and video game generation began to raise their own children. Some mothers watch television and write e-mails while breast-feeding, ignoring their babies eye contact. Some parents use "electronic babysitter" and allow their children up to age 2 to watch specific television programs and videos, while they do something else. Parents' own television and DVD watching time late at night draws in babies as well. Children are left unattended while parents are absorbed in e-mailing and games on their computers and mobile phones.

Child-rearing in this media-saturated environment significantly impedes the parents' emotional attachment with their child as well as the child's attachment to the parents. One result is a sharp increase of child abuse cases. Cases of abuse have been on the rise every year since data were first compiled in Japan in the 1990s. The 2007 result shows that number has risen 40 times in the past 17 years. The parents of these child abuse cases

were raised in the midst of media saturation themselves without developing adequate parent-child bonds and have not fully developed the brain functions that allow them to control their feelings and anticipate future. So they use violence rather than words against their child when the child doesn't turn out as expected or ignores their instructions. The perpetrators of abuse are blood parents in 85% of the cases. In 2007 data, the number of children who have died from abuse has risen rapidly to 2.5 children a week.

Lastly, let us take a look from children's prospect. In 2007, UNICEF surveyed children of age 15 in 24 countries. In Japan, 29.8% of them stated that "I feel lonely," placing Japan far ahead of other countries in first place. Iceland came in second at 10.3%. Lowest was Holland with 2.9%. Japan was also ranked the highest in "I feel I am

a nuisance and do not belong," at 18.1%. It would seem that Japanese children do not feel appreciated by their families and the society.

### **How Can We Prevent Media Saturation?**

Let me conclude by stating that NPO Children and Media, Japan Society of Pediatricians, and local governments around the nation have begun programs to address this problem. I invite you to refer to "Media zuke de kuzureru kodomotachi (The destruction of children by media saturation)," co-authored by Mr. Hiromi Utsumi, executive director of the Japan Society of Pediatricians, and myself (published in May, 2009, by Shonen Shasin Simbunsha). This book provides more data and information about local efforts that I was unable to discuss here.