

Mind and Body altering Media – The Impact of Modern Media on our Children

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3 More has changed in media consumption over the last **two years** than in the 30 years that preceded it.

Thanks to smartphones and laptops, people are **now spending one-half of their waking days** interacting with media, and **have increased their media consumption by an hour per day over the last two years.** (Ipsos OTX study of 7,000 online consumers from ages 13 on 2010)

That's more time than they spend working or sleeping!

“Communicating is now entertaining, and entertainment is communication,” (Bruce Friend, president of Ipsos OTX MediaCT)

The **speed** at which things can be delivered thanks to broadband, and the ways it can be delivered, with DVR and VOD, mean that the speed of change has ramped up in an unprecedented way.

4 According to the study, **24 percent of people now own a web-enabled smartphone**, while cellphone ownership has fallen from 81 percent to 65 percent since 2009. Compare this speed of change with the fact that **it took good old radio 40 years** to reach out to a population of regular listeners **of 50 Mio.**

This migration to portable web-enabled devices could have long term consequences, especially on our children growing up in this cyber world.

5 1.) Consumption of Modern Media: Facts

A new study from the Kaiser Family Foundation shows a "dramatic" rise in the amount of time children and teens spend using entertainment media, "especially among minority youth."
Generation M2: Media in the Lives of 8- to 18-Year-Olds

A national survey by the Kaiser Family Foundation released in January 2010 found that with

technology allowing nearly 24-hour media access as children and teens go about their daily lives, **the amount of time** young people spend with entertainment media **has risen dramatically, especially among minority youth.** Today, 8-18 year-olds devote an average of **7 hours and 38 minutes (7:38)** to using entertainment media across a typical day (that adds up to more than **53 hours** a week. And because they spend so much of that time 'media **multitasking'** (using more than one medium at a time), they actually manage to pack a total of **10 hours and 45 minutes (10:45)** worth of media content into those 7½ hours.

The only media use that declined was reading printed newspapers and magazines (for pleasure, not for school). All print reading went from 43 to 38 minutes a day,

The study looked at the use of TV, computers, video games, music, print, and cell phones

6 Black and Hispanic youth

The report found that black and Hispanic youth spend a lot more time consuming media than whites. Hispanics and blacks average about **13 hours** of media exposure daily compared to just over eight and half hours among whites. The report says that the "biggest race-related differences emerge for television time: **Black youth spend nearly six hours daily watching TV and Hispanics spend 5:21, compared to 3:36 for whites.**" Black and Hispanic youth spend about an hour more a day with music and an additional half hour a day with video games.

7 One word on Family rules!

Less than a third of the youth say they have rules about how much time they can spend watching TV (28 percent) or playing video games (30 percent). Seventy-one percent have a TV in their bedroom and 50 percent have a video game console in their room.

Of those families that do have rules or other limitations, children "**spend substantially less time**" with media than do children with more media-lenient parents.

Considering these facts about everyday exposure to modern media of our children, Dear audience, we have to realize, that **Media is a shaping power for our future world!**

The **new digital media's impact** on children's **physical and mental** health, which in professional and private everyday life has become increasingly frequent and intense, is widely **underestimated.** The **paradigmatic medialization of the world** has to be taken seriously and actively approached as a **physio-ecological and psycho-ecological factor** with **psychosocial, psychopathogenic and also neuroplastic effects as well as affecting our physical health.**

8 2.)Modern Media and Overweight

9 The most recent statistics show that the average American child spends over **1000 hours (up to 2 500)** a year watching TV and playing video games. To put that in perspective, they only spend **900 hours a year in school.** In Europe the numbers are only slightly different.

Television, video games, computers and now cell phones are becoming an increasing part of everyday life for our children. Although there may be many advantages of living in such a technological era, there are well-documented detriments as well.

Media societies are quickly becoming nations of **overweight individuals**, and obesity is highly correlated with increased screen-time. Studies have shown that children who **spend 4-6 hours a day** in front of screens have a higher risk of being **obese**. All this screen-time is at the expense of less time spent playing sports, doing outdoor activities, reading and having family time.

Obesity is a significant health threat. The extra weight puts added stress on all parts of the body.

10 Medical problems commonly resulting from untreated obesity and morbid obesity include:

Type 2 diabetes and metabolic syndrome

High blood pressure, heart disease, and stroke

Obstructive sleep apnea and other sleep disorders

Certain cancers, including breast and colon cancer

Depression

Osteoarthritis

Extreme obesity can lead to a gradual decrease in the level of oxygen in the blood, a condition called hypoxemia. Decreased blood oxygen levels and sleep apnea may cause a person to feel sleepy during the day. These conditions may also lead to high blood pressure and **pulmonary hypertension**. In extreme cases, especially when left untreated, this can lead to right-sided heart failure and ultimately death.

11 Research from as far as China and Mexico is increasingly identifying television exposure as an independent factor in obesity. **Mexico's** health ministry has reported that obesity has risen by **170 per cent in a single decade**, with odd ratios of obesity, 12 per cent higher for

each hour of television watched per day. While in **China**, a study of 10,000 people found that for each hour of television viewing, there was a significant increase in the prevalence of obesity. A study in New Zealand following children from birth to 15 years recently found the amount of television viewing to be a more significant factor in obesity than the effect sizes often reported for nutritional intake and physical activity.

12 A **26-year study** of the association between child and adolescent television viewing and adult health involving **1,000 children** recently published in the journal **The Lancet**, found that children who watched more than two hours of television a day between the ages of five and 15 developed significant health risks many years later. The study concluded that 15 per cent of cases of raised blood cholesterol, 17 per cent obesity, 17 per cent of smoking and 15 per cent of reduced cardiovascular fitness were linked to television viewing that took place years before when the adults were children. This link remained, irrespective of other factors such as social background, body mass index (BMI) at age five, parents' BMI, parental smoking and the physical activity of children by the age of 15.

13 Why You Should Care:

Because already **1 in 3 kids** in modern media society is **at risk for becoming obese**. Because, due to obesity and inactivity, millions of kids ages 12-19 already have a **pre-diabetic condition** that puts them at risk for full-blown diabetes and cardiovascular problems as adults. Obesity is overtaking tobacco as the number-one killer. On the other end of the spectrum, super-skinny models and celebrities set unrealistic and unhealthy beauty standards, adding to the already-overwhelming pressure to be thin or buff. In fact, **1 in 5 girls will experience an eating disorder**. Distorted perceptions of beauty can set the stage for misusing diet or body-building products and developing eating disorders like anorexia and bulimia.

14 3.) Sleep and Modern Media

15 An increasing number of studies have found that children get less sleep than previous generations had and experience more sleeping difficulties. New research has found a significant relationship between exposure to television and sleeping difficulties in different age groups, ranging from infants to adults. **The number of hours** of television watched per day was **independently associated with both irregular naptime and bedtime schedules.**

Moreover, passive exposure to TV of more than two hours per day was **strongly related to sleep disturbances**. TV viewing, particularly passive TV exposures, significantly increase the risk of sleeping difficulties. On the other hand, those adolescents who reduced their television viewing from one hour or longer to less than one hour per day experienced a significant reduction in risk for subsequent sleep problems.

16 The implications may be serious. Studies have shown that **lack of sleep can significantly alter levels of the hormone melatonin**, an extremely powerful **antioxidant**. Reduced amounts of melatonin may result in a **greater chance that the cell DNA will produce cancer-causing mutations**.

Melatonin also causes sleepiness. As it grows dark, the melatonin levels rise and help facilitate sleep. Researchers have reported that exposure to a television screen was associated with **lower urinary melatonin levels**, particularly affecting younger children at a pubertal stage when important changes in melatonin's role take place.

17 4.) Research on the Effects of Media Violence

There are still **three grey areas** on the research on the Effects of Media Violence, which might explain that there are controversial discussions can be kept on, **although** there is a general consensus among experts.

18 1.) Media violence is notoriously hard to define and measure. Some experts who track violence in television programming, such as George Gerbner of Temple University, define violence as the act (or threat) of injuring or killing someone, independent of the method used or the surrounding context. Accordingly, Gerber includes cartoon violence in his data-set. But others, such as University of Laval professors Guy Paquette and Jacques de Guise, specifically exclude cartoon violence from their research because of its comical and unrealistic presentation.

2.) researchers disagree over the type of relationship the data supports. Some argue that exposure to media violence **causes** aggression. Others say that the two **are** associated, but that there is no causal connection.

3.) Researchers don't agree about the mechanism between media violence and violent behaviour. Some say that the mechanism is a psychological one, rooted in the ways we learn. For example, Huesmann argues that children develop "cognitive scripts" that guide their own

behaviour by imitating the actions of media heroes. As they watch violent shows, children learn to internalize scripts that use violence as an appropriate method of problem-solving.

Other researchers argue that it is the physiological effects of media violence that cause aggressive behaviour. Exposure to violent imagery is linked to increased heart rate, faster respiration and higher blood pressure. Some think that this simulated "fight-or-flight" response predisposes people to act aggressively in the real world.

Still others focus on the ways in which media violence primes or cues pre-existing aggressive thoughts and feelings. They argue that an individual's desire to strike out is justified by media images in which both the hero and the villain use violence to seek revenge, often without consequences.

19 After hundreds of studies and the conclusions of major Federal and private scientific organizations (1,2), most experts agree **that there is a causal connection** between exposure to violence in the media and subsequent violent behaviour. Craig Anderson and Brad Bushman, psychologists studying in this area, wrote in a commentary that despite this overwhelming consensus, **the press has not communicated the results to the public**, but, rather, presents the issue as an unsettled scientific conclusion (3). With results from their own analytic review of close to 300 studies, they show how longitudinal, cross-sectional, field and experimental studies each contribute to an understanding of how exposure to violent media increases violent behavior.

The focus of their commentary was to review the results of the first published longitudinal study of violent media on adolescents by Johnson and colleagues (4). This study remains unique because it links exposures to violent media after childhood-i.e., among teenagers-and then follows them into young adulthood when aggressive behaviors actually take place. This study with its large sample size (707 families) and time span (17 years) allowed a meaningful test of television exposure on severe aggressive behaviors (such as assault and robbery) among these young adults. Also, they were able to control for key childhood factors that might otherwise be a cause of the aggression-e.g., childhood neglect, family income, neighborhood violence, parental education, and psychiatric disorders.

20 What are the findings?

Findings showed that among those who watched less than an hour of TV a day, 5.7 percent had committed a violent act that resulted in serious injury. Among those who watched one to three hours per day, 18.4 percent had been violent. Of those who watched more than three hours a day, the rate of aggression was 25.3 percent.

21 Research, published in 2000, found indications that exposure to violent **video games** also contributes to aggressive thoughts, feelings and behaviors. . Craig Anderson and Karen Dill (4) found that playing video games like Doom, Wolfenstein 3D or Mortal Kombat can increase a person's aggressive thoughts, feelings and behavior both in laboratory settings and in actual life. The scientists said that in one study they found that young men who are habitually aggressive became more so when exposed repeatedly to violent games. The other

study revealed that even a brief exposure to violent video games can temporarily increase aggressive behavior in all types of participants."

The introduction of television into a community leads to an increase in violent behaviour

Researchers have also pursued the link between media violence and real life aggression by examining communities before and after the introduction of television. In the mid 1970s, University of British Columbia professor Tannis McBeth Williams studied a remote village in British Columbia both before and after television was introduced. She found that two years after TV arrived, violent incidents had increased by 160 per cent.

22 5.) Neurobiological Modification by Modern Media

23 One thing researchers agree on is that **any technology we use will change the brain.**

There is nothing surprising or sinister about this, says **Martin Westwell** at the University of Oxford's Institute For the Future of the Mind. "You are who you are largely because of the way the brain cells wire up in response to the environment and the things you do. If you change the wiring you will change the way we think."

24 A growing body of empirical evidence is indicating that watching television causes physiological changes, which are really not for the better. **Most of these effects occur irrespective of the type of programme** that people watch - whether it is violence or teletubbies (fun, games, etc). It is the medium, not the message.

Watching television is now **the industrialised world's main pastime**, taking up more of our time than any other single activity except work and sleep. However, biological sciences are fast becoming the new arena for examining the effects of society's favourite pastime. And in industrialised societies, **the findings are set to recast the role of the television screen as the greatest unacknowledged public health issue of our time.**

Attention and Cognition

The general guidelines recommend that **children under the age of two should not watch TV** or any form of screen entertainment at all because television "can negatively affect early brain development" and that children of all ages should not have a television in their bedroom.

Early exposure to television during **critical periods of synaptic development** would be associated with **subsequent attention problems**. Little thought has gone in to the potentially

crucial role that early childhood experiences may have on the development of attentional problems.

Children who watch television at **ages one and three had a significantly increased risk** of developing such attentional problems by the time they were seven. **For every hour** of television a child watched per day, there was a **significant increase** in attentional problems.

Compared to the pace with which the real life unfolds and is experienced by young children, **television portrays life with the fast-forward button fully pressed.** Rapidly changing images, scenery and events and high-fidelity sounds are highly stimulating and extremely interesting. **Television is the flavour enhancer of the audiovisual world,** providing **unnatural levels of sensory stimulation.**

25 Researchers are now asking if it is possible that **television's conditioning of short attentional span** may be related to some school children's attentional deficits in later classroom settings. This points out that the recent increase of attention deficit disorders in children of school going age might be a natural reaction to our modern, fast culture - **an attention deficit culture.**

Early exposure to television is now found in another childhood condition. The very latest research on communication disorders suggests that early childhood television viewing may be an important trigger **for autism** (communication disorders) and Autism associated Syndroms, the incidence of which appears to be increasing.

Research into Alzheimer's disease are concluding that each additional daily hour is associated as a risk factor. This, in turn, leads to cognitive impairment in all measures, including attention, memory and psychomotor speed. For example, a study looking at differences in cerebral blood flow between children playing computer games and children doing very simple repetitive arithmetic adding single digit numbers found that computer games only stimulated activity in those parts of the brain associated with vision and movement as compared to arithmetic-stimulated brain activity, adding single-digit, numbers-activated areas throughout the left and right frontal lobes.

Television viewing among children under three years of age is found to have a negative effect on mathematical ability, reading recognition and comprehension in later childhood. Along with television viewing displacing educational and play activities, it is suspected that this

harm may be due to the visual and auditory output from the television actually affecting the child's rapidly developing brain.

A 25-year study, tracking children from birth has recently concluded that television viewing in childhood and adolescence is associated with poor educational achievement by 30 years of age. Early exposure to television may have long-lasting adverse consequences for educational achievement and later, the socio-economic status and well-being.

26 6.) Short summary

27 Kids 8-18 spend an average of 53.5 hours a week with media, versus 8.75 hours exercising.

A preschooler's risk of obesity jumps 6% for every hour of TV watched per day, 31% if the TV is in their bedroom.

The average child in a media society sees 40,000 commercials annually on broadcast TV alone. 80% of the TV commercials are for fast food, candy, cereal and toys.

An average of **one food commercial is shown every 5 minutes** during Saturday morning cartoons.

The food and beverage industry spends more than \$10 billion targeting children and youth through TV ads, coupons, contests, public relations promotions and packaging.

The number-one wish for girls 11-17 is to be thinner; boys 11-17 want a physical ideal that can only be achieved through dangerous steroid use. **Kids see more than 250,000 commercials aimed at their appearance by age 17.**

28 Common Sense Says:

Set limits on media time, and stick to them. Studies show that the moment the TV is turned off, weight drops. Create a balanced schedule of how much media your kids can consume and when. Agree that if they do their homework and chores, they can go online, instant message (IM) their friends, see their favorite show. Sit down and draw up expectations.

Get your kids up and moving. Encourage younger kids to be physical and interactive while engaging in media. Dance, clap hands, anything. As for tweens and teens? Choose games that get them off the couch.

Watch media with your kids. Point out when someone is selling them something that isn't good for their bodies. Point out how much effort (stylists, trainers, image editing, etc.) goes into celebrities' looks - it's their job, after all. Point out product tie-ins, advergames, and placements and how they're embedded in media.

Model good behaviour. Take a break from the screen - even when you're really busy. Get everyone up and moving with a walk, a ride, a trip to the store, or even a chore.

Explain the basics of diabetes, obesity, and eating disorders. See if you can find examples of behaviours in media that could lead to any of these diseases.

Be careful when discussing weight with your kids. They can easily feel criticized, since it's natural for them to be hyper-sensitive about their bodies. Keep the emphasis on health rather than appearance.

Keep information age appropriate. With elementary school kids, explain how diet and exercise keep them healthy. Middle schoolers can absorb information about obesity, eating disorders, alcohol, drugs, and cigarettes. Teens should understand that stars look the way they do thanks to Photoshop, makeup artists, strict diet, and tons of exercise.

Limit or avoid exposing young kids to commercials. Kids 2-7 often can't distinguish between ad messages and reality. Even age-appropriate shows tend to be surrounded by commercials designed to give kids the "gimmies" for foods that are often full of sugar and fat.

Get the TV, computer, and video game console out of your kids' bedroom. Studies show that kids watch more, you have less control, weight increases, and grades drop. The risk for obesity jumps 31% for each hour of TV watched.

Don't let young girls immerse themselves in fashion magazines - without giving them some healthy perspective. Studies show that teens who read lots of diet articles are more likely five years later to practice extreme weight-loss measures such as smoking cigarettes, abusing laxatives, and fasting.

Don't eat with the TV on. Turn it off and enjoy your family.

29 Some key points:

Kids consume a hell of a lot of media--and more all the time. **Basically, if kids are awake, they're consuming media.** And, increasingly, they're consuming multiple forms of media at the same time.

Kids' print media consumption is tiny and falling.

Kids' digital media consumption is going through the roof.

No big surprise there. **What is a surprise is how little parents seem to care about this.** (Or, alternatively, how much parents encourage this media consumption by consuming a huge amount of media themselves.)

30 In 2/3 of households, TVs are on during meals

In 75% of households, TVs are on when no one is watching them.

More than 70% of kids have TVs in their bedrooms

Only 1/3 of households have media-consumption rules

No surprise, more media is consumed in households in which TVs are always on, where there are no rules, and where kids have TVs in their bedrooms.

END

Watching television, irrespective of the content, is increasingly associated with unfavourable biological and cognitive changes. These alterations occur at viewing levels far below the population norm. Given the population's sheer exposure time to this environmental factor it is more than puzzling to consider how little awareness and action has resulted.

Perhaps because television is not a dangerous substance or a visibly risky activity, it has eluded the scrutiny that other health issues attract. Additionally, there is little attention being paid in looking for the negative effects of the world's favourite pastime.

To be sure, there has been some lack of political will to take on the enormously powerful and influential entertainment industry to be recognised as a major public health issue". The

biological sciences are instrumental in providing an alternative account of the influence of screen media.

31 By ignoring these observations, findings may ultimately be responsible for the greatest health scandal of our time.