

# Impact of Excessive Media Use on Adolescent Development and Social Adjustment



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# Presentation Outline

- **Identifying the problem**
- **Research**
- **Identifying solutions**
- **Additional considerations**
- **Encouragement**
- **Questions/Comments**



# Identifying the Problem

**Does YOUR toddler play on an iPad? Taiwan makes it ILLEGAL for parents to let children under two use electronic gadgets... and under-18s must limit use to 'reasonable' lengths**

- **Children under two banned from using electronic devices in Taiwan**
- **Parents who allow children to use iPads and smartphones face fines**
- **Under-18s are only allowed devices for a 'reasonable length of time'**



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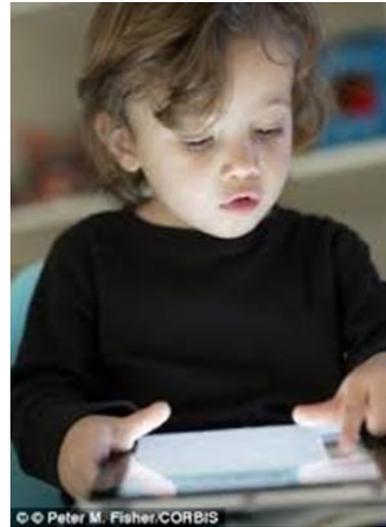
<http://www.dailymail.co.uk/news/article-2929530/Does-toddler-play-iPad-Taiwan-makes-ILLEGAL-parents-let-children-two-use-electronic-gadgets-18s-limit-use-reasonable-lengths.html#ixzz42UVc8Eg4>

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# Identifying the Problem

## TEDTalk:

- [http://video.dailymail.co.uk/video/1418450360/2015/01/1418450360\\_4017272066001\\_ipads-1422446654482.mp4](http://video.dailymail.co.uk/video/1418450360/2015/01/1418450360_4017272066001_ipads-1422446654482.mp4)



# Identifying the Problem

## Depression Risk for Teens from Social Media

Glasgow University research - 467 teenagers, aged 11 – 17

### Findings

- Facebook and Twitter most popular
- Many use a number of mobile devices simultaneously into the early hours of the morning, experience more sleeping problems, including sleep quality
- Emotionally invested most affected
- Pressure to be available 24/7, anxiety around “missing out”

# Identifying the Problem

## Depression Risk for Teens from Social Media

Glasgow University research - 467 teenagers, aged 11 – 17

### **Mental Health Concerns:**

- Increased vulnerability for the onset of depression and anxiety during adolescence
- Increased evidence supporting link between social media use and wellbeing
- Suggests a “digital sunset”
- Provide appropriate support to adopt balance

# Identifying the Problem



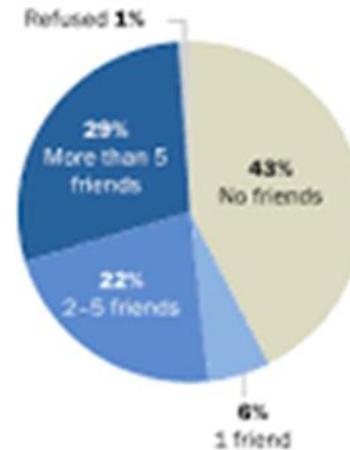
# Identifying the Problem

## Friendships



### 57% of All Teens Have Made New Friends Online

% of all teens who have made \_\_\_ friends online



% of all teens who ...



Source: Pew Research Center Teens Relationships Survey, Sept. 25-Oct. 9, 2014, and Feb. 10-March 16, 2015 (n=1,060 teens ages 13 to 17).

PEW RESEARCH CENTER

# Identifying the Problem

## Effects of Sexually Explicit Online Materials (SEOM)

### Hong Kong Study (2012)

- **Concerns identified:**
  - Online SEOM materials may deliver incorrect information or transmit distorted values to young people
  - SEOM had profound influence on beliefs regarding sexual coercion, permarital sexual permissiveness, sexual compulsivity, and sexual daydreaming
  - Influence on adolescent attitudes regarding the sexualization of women for the purpose of sexual gratification through dominance, harrassement, discrimination, and accepting male-female sexual aggression

# Identifying the Problem

## Effects of Sexually Explicit Online Materials (SEOM)

### Hong Kong Study (2012)

- Reported 2 North American studies – **72.8% and 83.8% of adolescent respondents** reported exposure to SEOM
- HK study reported initial exposure age average was **11.9**, with 20% being regarded as **frequent users**

# Identifying the Problem

## Effects of Sexually Explicit Online Materials (SEOM)

### Hong Kong Study (2012)

- Studied 5 areas in both SEOM viewers and non-viewers
  - Acceptance of beliefs about stereotyped gender roles
  - Acceptance of premarital sex
  - Acceptance of power imbalance in sexual relationships
  - Sexual compulsivity
  - Preoccupation with sexual desires and fantasies
  
- In ALL areas SEOM viewers were significantly higher

# Research

## 1993 study – Effects of Scene Changes

- Screen cuts serve as visual markers alerting the viewer to new information being presented to increase attention
- Integrating these segments is based on the ability to determine the relationship between the segments connected by the cuts
- Television is explained in 2 dimensions – content and structure
  - The content is the message
  - The structure includes the way the message is presented, ie. edits, pacing, camera movement, scene changes, and narrative structure
- 3 Hypotheses relating to attention and responses to scene cuts
- Results – unrelated sequence cuts required more attention than related sequences, most demanding after 1 second of onset
  - Related sequences – no discernible increase in attention
- “When expectations are violated, viewers must reorient to the new information, requiring more controlled attention than when responding to cuts in related sequences.

# Research

## Gamma Waves

### What are Gamma Waves?

- <https://www.youtube.com/watch?v=997KAkspLDk>



# Research

## Gamma Waves

Brainwave Types (Wikipedia)

|       |             |  |                 |  |                    |
|-------|-------------|--|-----------------|--|--------------------|
| gamma | inspiration |  | higher learning |  | focus              |
| beta  | alertness   |  | concentration   |  | cognition          |
| alpha | relaxation  |  | visualization   |  | creativity         |
| theta | meditation  |  | intuition       |  | memory             |
| delta | healing     |  | sleep           |  | detached awareness |

- **Alpha:** 8 Hz to 12 Hz, associated with relaxation
- **Lo-Beta:** 12 Hz to 15 Hz, normal waking consciousness
- **Beta:** 15 Hz to 18 Hz, normal waking consciousness
- **Hi-Beta:** 19 Hz to 25 Hz, normal waking consciousness
- **Gamma:** 26 to 100 Hz, associated with perception and consciousness and higher mental activity

# Research

## Gamma Waves

|         | Drawing | Reading | Watching TV |
|---------|---------|---------|-------------|
| Hibeta: | 4.61    | 4.50    | 2.41        |
| Gamma:  | 1.18    | 0.23    | 0.06        |
| Alpha:  | 1.53    | 2.16    | 1.43        |
| Lobeta: | 1.43    | 1.30    | 1.24        |
| Beta:   | 2.67    | 0.85    | 0.98        |

### Brainwaves: A Comparison of the Samples

The electrode was placed at the Fp1 position, and the subject's brainwaves were measured for 11 to 12 minutes for each activity.

# Research

## How TV Affects Brainwaves:

- “Formal features” – camera cuts, pans, zooms – of TV watching trigger the brain’s **orienting response repeatedly**
- Orienting response triggers alpha brain waves to decrease, making the brain more alert
- Orienting response causes Gamma waves to disappear, this decrease results in breaking a person’s focus
- Gamma waves have a harder time returning to previous levels, therefore IF the orienting response is triggered too often (as with watching TV and/or experiencing other rapid scene changes), the brain **stays alert, but unfocused.**

# Research

## Why GAMMA brainwaves are important:

“Gamma waves are fast, high-frequency, rhythmic brain responses that have been shown to spike when higher cognitive processes are engaged. Research in adults and animals suggests that lower levels of gamma power might hinder the brain’s ability to efficiently package information into coherent images, thoughts and memories.” – [Science Daily \(Oct 2008\)](#) See also [Associated Content \(April 2008\)](#)

# Research

## Why GAMMA brainwaves are important:

“Analyzing the children’s EEGs (electroencephalograms), Benasich and her research team found that those with higher language and cognitive abilities had correspondingly higher gamma power than those with poorer language and cognitive scores. Similarly, children with better attention and inhibitory control, the ability to moderate or refrain from behavior when instructed, also had higher gamma power.” – [Science Daily \(Oct 2008\)](#) – and more at [Scientific Blogging \(Oct 2008\)](#)

# Research

## TV Watching and Violence Rates

- Research aimed at determining the link between television viewing and violence has well-established that the introduction of television viewing can result in an increase in violence rates as high as between 130 - 160%



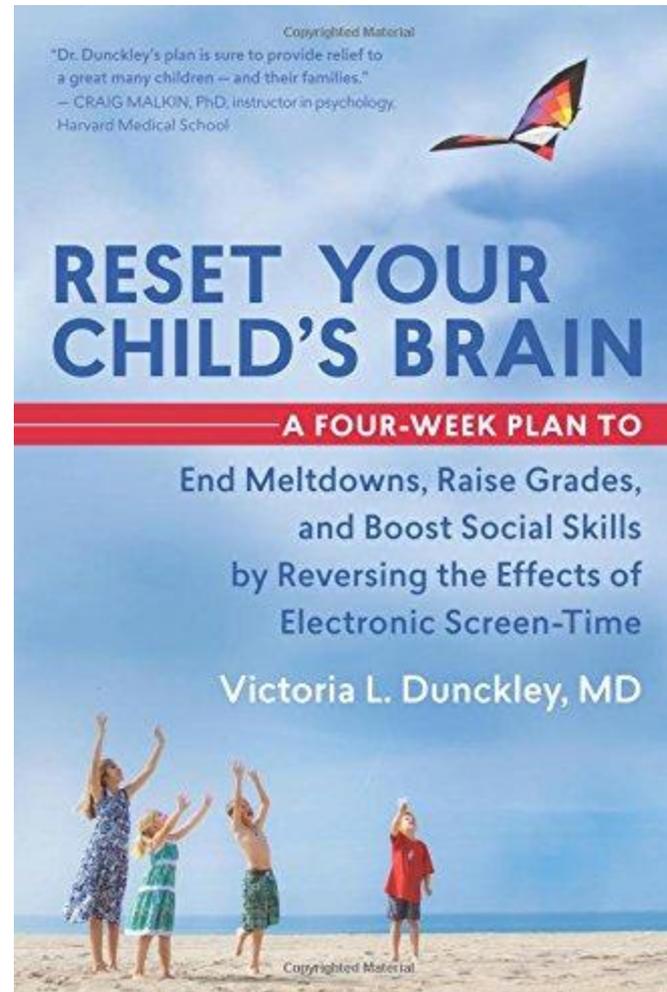
# Research

- 2007 – Korean study – dopamine plays a key role in reward-linked behaviour, hypothesis that this same scenario applies to videogaming

**Results** - Excessive internet video game play (EIGP) is linked to a dopamine reward dependence and that there are many adolescents who play excessively



# Identifying Solutions



# Identifying Solutions

- Dr. Dunckley states that Electronic Screen Syndrome (ESS) accounts for the majority of the increase in psychosocial and neurodevelopmental issues in children
- These issues are largely related to *dysregulation* that occurs in relation to ESS



# Identifying Solutions

**Dr. Dunckley reports that in utilizing a strict electronic fast, she has found:**

- **80%** of children with psychiatric disorders will experience at least a **50%** rate of marked improvement in all symptoms
- Children without an underlying disorder the improvement rate is even higher, and of those who respond positively, about **half** will show a **complete resolution** of symptoms, the other half will show marked improvement.

# Identifying Solutions

## ESS Symptoms:

1. Symptoms due to **hyperarousal** that cause dysfunction (mood, anxiety, cognition, behaviour, social interaction)
2. May occur in the presence or absence of other disorders
3. Child is often described as “stressed out”, “revved up”, “wired”, “out of it”
4. Symptoms improve markedly, or completely resolve with an electronic fast for several weeks

# Identifying Solutions

## ESS Symptoms:

5. Symptoms reoccur with the reintroduction of electronic media following a fast
6. Child will frequently be **intensely drawn** to screen devices and will have difficulty pulling away from them
7. Risk factors – male, younger, preexisting disorders, addiction tendencies, **younger first screen exposure age**, concurrent or past psychosocial stressors

# Identifying Solutions

- **“Research suggests that ALL screen activities provide unnatural simulation to the nervous system and can cause adverse affects”**
- **“Content isn’t as important as amount”**
- **“Interactive screen-time causes more dysfunction than passive”**

# Identifying Solutions

- “Screen time” refers to **any** and **all** time spent in front of any device with an electronic screen



# Identifying Solutions

**Health risks related to both interactive and passive screen-time:**

**sleep problems**

**attention problems**

**diminished creativity**

**slower reading development**

**depression**

**irritability**

**obesity**



# Identifying Solutions

## The Screen-Liberated Brain: Changes experienced:

- within days
- within weeks
- within months
- over years



# Identifying Solutions

## Reset Plan

### Week 1: Getting Ready

#### 10 Steps

1. Define problem area and target goals
2. Get your spouse and other caregivers on board
3. Set a date and create a schedule
4. Inform relevant adults in your child's life
5. Obtain toys, games, and activities to replace screen time

# Identifying Solutions

## Reset Plan

### Week 1: Getting Ready

#### 10 Steps

6. Schedule breaks or treats for yourself
7. If possible, enlist a playmate's parents to join you
8. Inform your child and involve the entire family
9. Perform a thorough "screen sweep"
10. Set your intention

# Identifying Solutions

## Weeks 2 – 4 - The Electronic Fast

- Be ready for your child's negative response
- Be encouraged – other parents have done this, you can too!
- Validate your child's feelings and comfort them while standing firm, be matter-of-fact with clear expectations, present alternatives and planned treats
- The first week is the hardest
- The second and third weeks become easier, improvements will become more evident
- Children with slower improvements, may need a longer fast

# Identifying Solutions

## Week 2 – Unplug in order to reset

### What you can expect:



- Return to healthier, more imaginative, more physical forms of play
- Improved mood and less extreme/less frequent meltdowns as dopamine and serotonin levels begin to normalize
- Improved compliance and less oppositional-defiant behaviours

# Identifying Solutions

## Week 3 – Allow your child's brain deep rest

### What you can expect:

- Deeper more restful sleep
- Earlier bedtime, less resistance to bedtime, more energy upon awakening
- Continued improvement in meltdowns and mood swings
- Improved organization
- Improved impulse control
- Less arguing and negotiating about returning screen devices
- Increased spontaneous play and imagination use

# Identifying Solutions

## Week 4 – Healing and Reclaiming the Brain

### What you can expect:

- Dampened stress response and improved coping
- Reduced signs of anxiety
- Heightened curiosity and improved retention of new information
- Better manners and more respectful attitude
- Circle of improvement (better rest -> better mood -> improved self-image -> better sleep)

# Identifying Solutions

## Reset Plan

### How to address concerns at school:

- Most of the time, an electronic fast is successful if ALL interactive screen-time outside of school is eliminated
- Homework rules:
  1. Schedule computer-related work in the afternoon or early evening
  2. Require that a stationary computer in a common area be used so child can be seen
- Some children may need complete elimination for the fast to be effective

# Identifying Solutions

## Everyday House Rules and Protective Practices

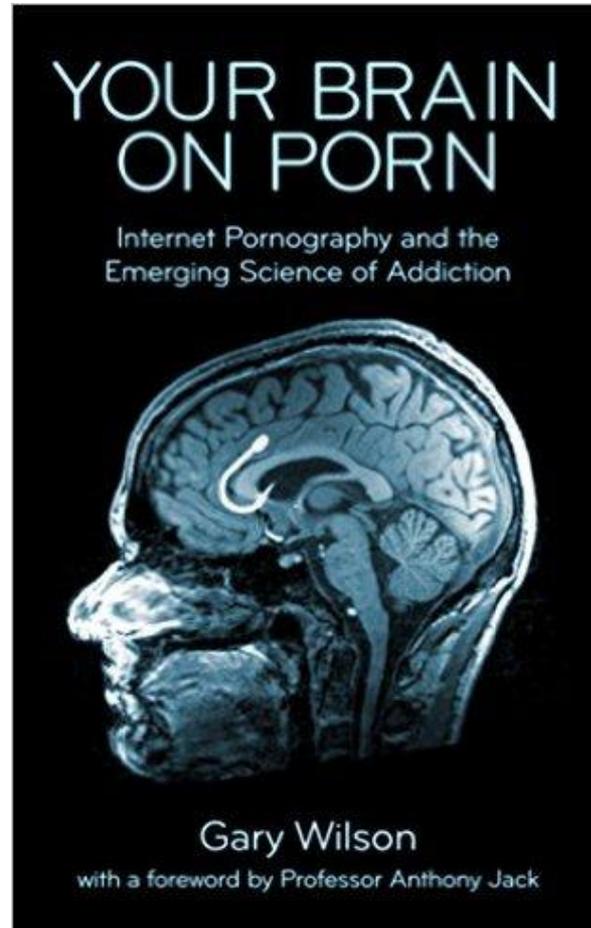
- Go wired
- Reduce artificial brightness
- Download f.lux, (gradually changes screen brightness)
- Use smaller screens, view from farther away
- Maintain a sleep sanctuary, optimize bedroom lighting
- Minimize screen time after sundown

# Identifying Solutions

- Restart is usually successful without eliminating school-related screen-time **IF** fast guidelines and house rules are strictly followed



# Identifying Solutions



# Identifying Solutions

- 2014 Canadian sexologists' study reported sexual functioning problems are higher in adolescent males than adult males
- 53.5% of male teens reported symptoms indicative of a sexual problem
- Main reason online pornography addiction is so powerful is due to **dopamine** surges influenced and caused by **novelty** and the **Coolidge effect**

# Identifying Solutions

## Dopamine and Internet Porn

- Dopamine surges with novelty
- Dopamine plummets when the initial thrill fades away
- For the internet porn user, there is what appears to be inexhaustible novelty “with multiple tabs open and clicking for hours”

# Identifying Solutions

**Dopamine also fires up for other emotions and stimuli:**

- **Surprise, shock**
- **Anxiety (using porn that isn't consistent with your values or sexuality)**
- **Seeking and searching**



# Identifying Solutions

**As with other internet and media content,**

- ***Overstimulation Leads to Desensitization***
- **Unconscious effects of porn viewing**
  - **What they see becomes what they think is the norm**
  - **“Superficial conditioning”**
- **Our brains are plastic**
  - **Wire up a new cue -> never know when it will trigger a reaction**

# Identifying Solutions

- **2004 – Swedish researchers found that 99% of young men had consumed pornography and more than half felt it had had an impact on their sexual behaviour**
- **Unconscious wiring in the adolescent brain can lead to unexpected shifts in sexual tastes**
- **The brain maps for new, exciting images at the expense of what had previously attracted them**

# Identifying Solutions

- Gary Wilson reports that in his recovery program, the vast majority of guys need **2 – 6 months** (or longer) to *fully* recover from a pornography addiction. Most are younger guys who started on porn early
- The same brain plasticity that induces porn addiction, can also work the other way to ***reset the brain*** of those who choose to quit porn, but they need months longer to recover to attain normal sexual function

# Identifying Solutions

**Internet pornography use is an extremely powerful addition – for a number of reasons and needs to be taken seriously.**

- **If you know someone experiencing this struggle, Gary Wilson’s book and program appear to be at this time, one of the best resources available**
- **Some churches also offer accountability programs for this issue**



# Identifying Solutions

- Similar to the media fast recommended for ESS, Wilson recommends a “*reboot*” of the brain and body
- Process for **rebooting**:
  - Avoiding artificial sexual stimulation, may take months to shut down and restart the brain
  - Can change brain structures by changing behaviours
  - Goal – to seek pleasure in interacting with real people, priorities will gradually shift

# Identifying Solutions

**Media on the Brain – Program to educate and address various types of media influences**

[https://www.youtube.com/watch?time\\_continue=264&v=nLm1MUQiYQY](https://www.youtube.com/watch?time_continue=264&v=nLm1MUQiYQY)

<https://youtu.be/nLm1MUQiYQY>

# **Additional Considerations**

- **Media on the Brain – view DVD's as a group or in homes**
- **Recent research on pedophilia – be aware**
- **Importance of self-discipline and frontal lobe development in children is important now**

# Encouragement

**Conflict and Courage, February 18 - We may be placed in trying positions, for many cannot have their surroundings what they would; and whenever duty calls us, God will enable us to stand uncorrupted, if we watch and pray, trusting in the grace of Christ. But we should not needlessly expose ourselves to influences that are unfavorable to the formation of Christian character....**

# Encouragement

- **2 Corinthians 10:5** - Casting down **imagnations**, and **every high thing** that exalteth itself against the knowledge of God, and bringing into captivity **every thought to the obedience of Christ**;
- Phil. 4:8 - Finally, brethren, whatsoever things are **true**, whatsoever things are **honest**, whatsoever things are **just**, whatsoever things are **pure**, whatsoever things are **lovely**, whatsoever things are of **good report**; if there be any **virtue**, and if there be any **praise**, **think** on these things.

# Encouragement

## Final encouragement for parents:

- **Persevere**, God will honour your sincere efforts
- **Ask for wisdom** – James 1:5
- **You are not alone** – Heb. 13:5, support each other, form a prayer group
- **Personal example...** Prov. 22:6 – train up a child...on classical music

# Questions/Comments