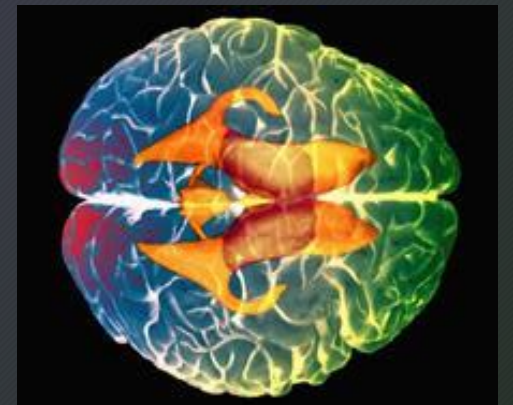
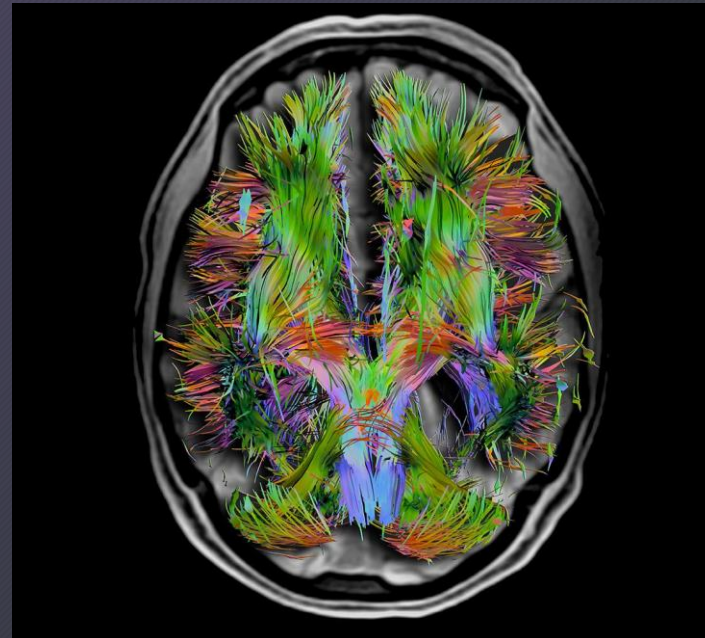
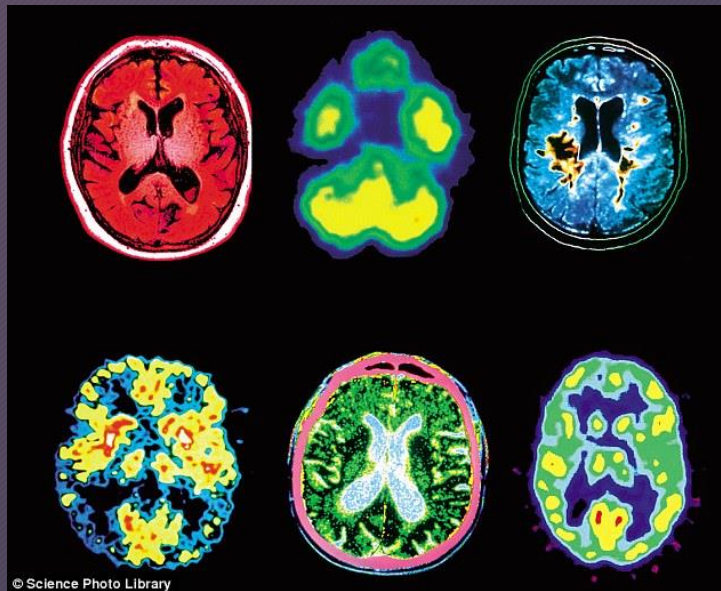


DON'T HIT SEND: The Impact of Social Media on Brain Development

- Michael Nerney and Associates
- PO Box 93, Long Lake, NY, 12847
- michaelfnerney@gmail.com
- 518-624-5351

Brain Imaging Systems

- CAT
- PET
- MRI/fMRI
- DSI

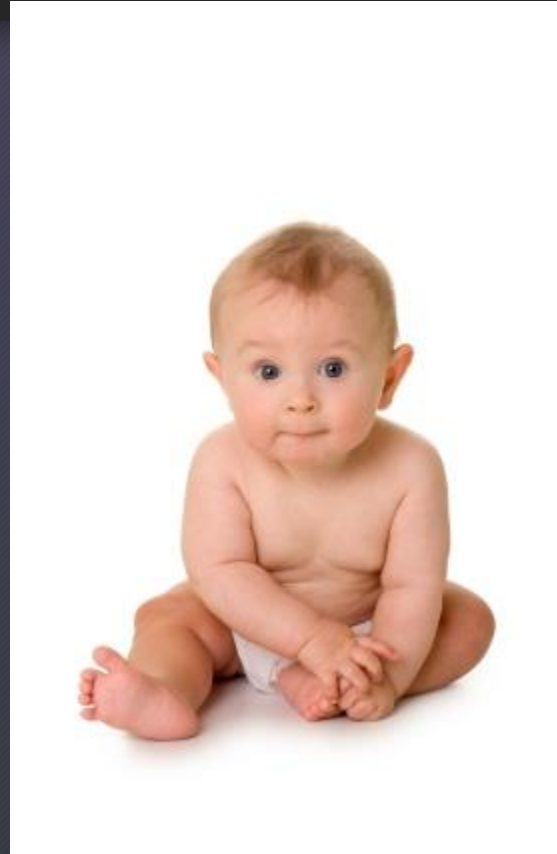


Brain Studies



Brain Studies

- Infant/Stranger Studies
- Mom's face and eyes
- Not available online



“You’re gonna have to face it”

- The Growing Problem Of Smartphone Addiction
- By Brenda Priddy, Guest Contributor to TechAddiction
- Smartphone Addiction Psychology Today
- Nomophobia- fear of being without your smartphone- affects 40% of the population
- Smartphone addiction could be changing your brain
- by Sandee LaMotte, CNN

Smart Phone Addiction

- **iPhone Separation Anxiety Makes You Dumber, Study Finds**
University of Missouri
- Screenagers
- Nomophobia
- FOMO

Smart Phone Addiction

- Do You Have 'Phantom Vibration Syndrome'?
- By [Tim Locke](#)
- Tech Neck
- Selfie Stomach
- Gamer's Thumb

Studies vs Surveys

- Surveys

- Self Report

- Anonymous

- Studies:

- Causation

- Correlation

- Association

Strong

Weak

Studies vs. Surveys

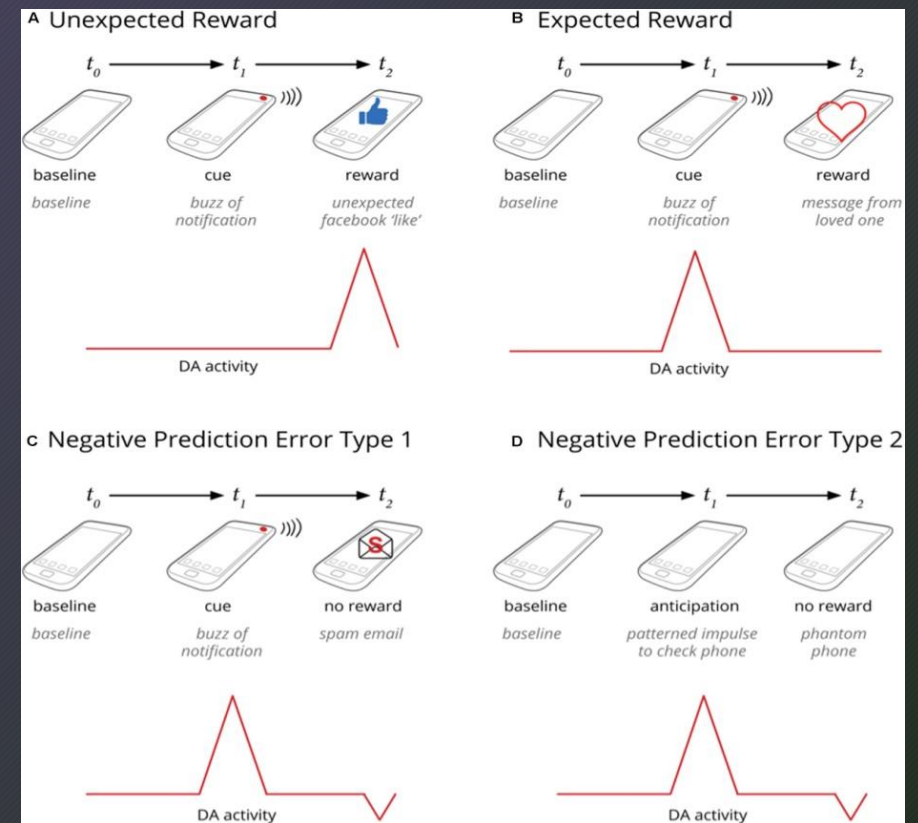
- Gold Standard
- Causation
- Correlation
- Association

DENIAL-Not just a river in Egypt

- **Hypernatural Monitoring: A Social Rehearsal Account of Smartphone Addiction**

No evidence from “good” studies

Limited consequences



Good Studies in Progress

- ABCD Study 4,500 students 8-11 years old
- Mostly test performance

- NIH 10 year study on 9 and 10 year olds
- MRI and testing

- Early Results ABCD under 2hrs per day + sleep = best
 NIH 7 plus hrs per day = Cortex thinning

Social Media and the Adolescent Brain

- New Resource:

American Girls

Social Media and
the Secret Lives
of Teenagers

Nancy Jo Sales



ONLINE ACCESS

- What age?
 - Average age is 8
 - 39% falsify age for Social Media
 - 20% have SM account unknown to parents
- Which devices?



ONLINE ACCESS

- Which conditions?
 - When can you use?
 - 94% daily, 24% almost constantly, 56% several times
 - Which Apps can you have? Positive, Neutral, Negative
- What safeguards?
 - 70% of parents worry, 50% have installed parental control



Apps are Us

- Social interaction: Facebook, Instagram, Snapchat, Twitter, Google+, Pinterest, Tumblr, WhatsApp, Reddit
- Video chat: Skype, Facetime, Oovoo, Omegle
- Education/Learning: Exam Time, Mind Maps, Flashcards, Remind
- Gossip Apps: Whisper, Rumr, Ask.fm BurnNote

Advise Parents/Guardians Re: Contract

- I will stick to the usage allowed with our cell phone plan.
- My cell phone must be turned off at ****_ each night.
- I agree that if I am unable to keep up with my promises, the use of my cell phone will be taken away from me. My phone can be taken away.
- I will not use my cell phone to take pictures or video of nudity, violence, or other unlawful activities.
- I will not use my cell phone to call anyone for malicious purposes.

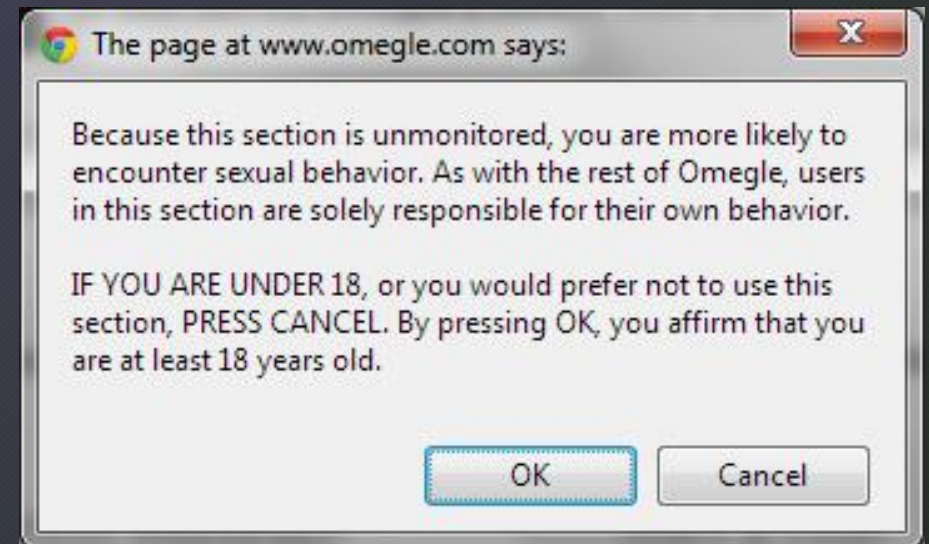
Advice to Parents/Guardians Set Controls

- Access
- Remote shut down
- You ARE the BOSS of them



High Risk Apps

- Omegle



Other Similar Apps

- ChatRoulete, ChatRandom, ChatRoomly, ChatRad, QuieroChat
- VideoChatUS, Bazoocam, iMeetzu, DirtyRoulete
- And many, many more

Impact on Brain Development

- Exposure to Pornography
- Exposure to Sexual Deviance
- Compulsive Viewing
- Manipulation/Mistrust

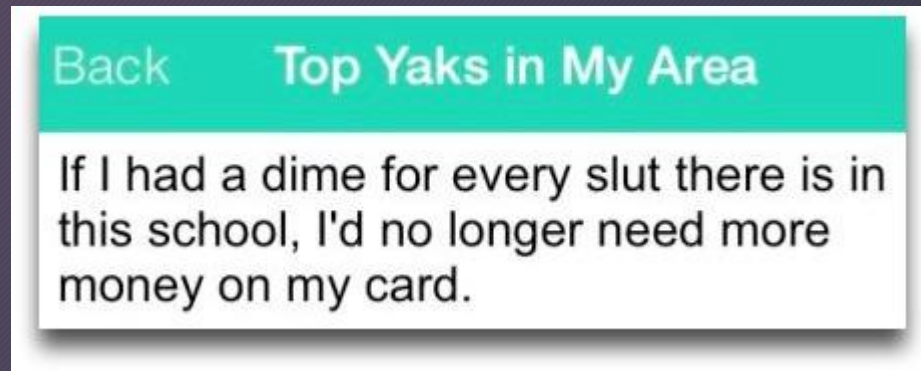
UCLA STUDY

- Brain Activity from “Likes” study
- Snapchat photos posted and “liked”
- Response to other “liked” photos
- Activity in NA reward sites



Degrading or Cyberbullying Potential

- Kik Messenger
- Ask.FM
- YikYak
- Whisper



Classroom Contract

- I will not use my cell phone during class



THE BIG THREE

- Negative impact on learning
- Preventing peer to peer damage(Cyberbullying)
- Safeguarding children from internet dangers

Impact on Learning

- Time on game tasks
- Family conflict
- Sleep deficits
- Negative emotions



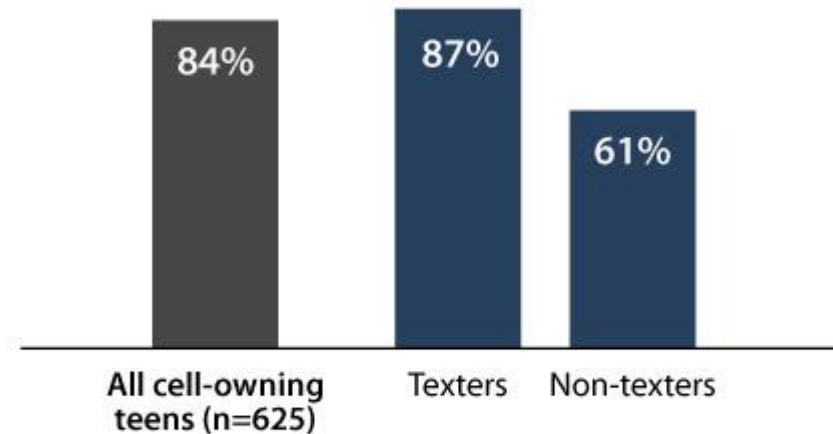
To sleep, perchance to learn

- 13-17 year old students
 - 50% report 30 plus hours per week video
 - 73% of teens have smartphones, and 3/4

Impact on sleep

Prolonged sleep onset, reduced slow

Texting related to increased likelihood that a teen will sleep next to his or her phone



Source: Pew Research Center's Internet & American Life Project, Teens and Mobile Phones Survey, conducted from June 26 – September 24th, 2009. n=625 teen cell phone owners ages 12-17 and the margin of error is +/- 5%. For smaller subgroups, the margin of error may be larger. Please see the Methodology section for details.

iPad vs Printed page Sleep study

- Brigham and Women's Hospital, National Academy of Sciences
- iPads, Tablets, Laptops, iPhone
 - iPads-Longer to fall asleep
 - Felt less sleepy at night
 - More tired during daytime
 - Lower Melatonin release
 - Shorter REM cycles



First things first

- Sleep!
- Normal sleep needs
- Cognitive errors
- ER errors



Sleep deficits

- Fewer than 20%
- Physical risks
- Emotional risks
- Behavioral risks
- Academic risks



Sleep deficits

- Impact on school performance
 - Double digit drop in memory, and problem solving
 - Attentional deficits, problematic behaviors, hostility
 - Tardiness, missing homework, less class participation



Sleep Deficits and Mental Health

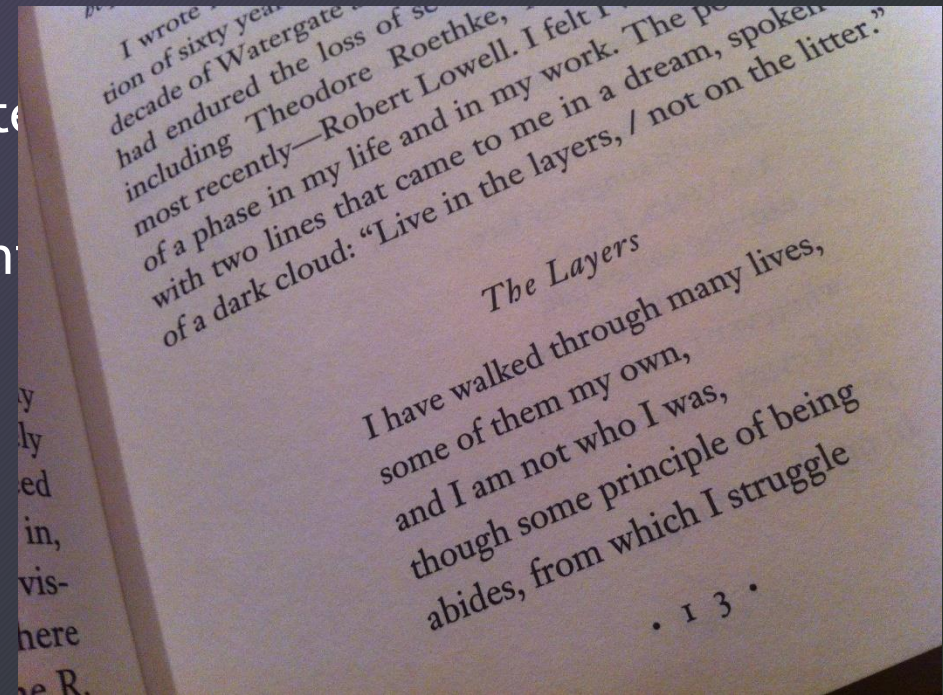
- Journal of Youth and Adolescence February 2015
- Teens need 9 hours average sleep
- Teens get 6.5 hours average sleep
- Each hour of lost sleep associated with increased risk:
 - 23% substance abuse, 38% feeling sad and hopeless
 - 42% considering suicide, 58% attempting suicide

Strategies

- For Students: Health classes, Biology classes, Freshman seminars, Sports programs, Exam prep
- For Administration, Social worker, School Psychologist, Counselor
 - Set of questions regarding sleep for any student struggling with executive function, self control, judgement, academics, and behavior
- For Parents: Parent University, Parent Newsletter, Pre Exam Advice, One to One all focused on Teen sleep needs

Nothing like a good book

- Books/paper have the following advantages over digital devices
 - Better recall of plot, characters, overall content
 - Higher levels of engagement, greater empathy
 - Tactility, scrolling, multiple page access
 - Two dimensional
 - Not universal



Tablet/laptop vs Handwritten Notes

- “The pen is mightier than the keyboard” Psychological Science
- Speed of notetaking
 - 33 to 22 per minute
- Learning Functions
 - Recall, concepts, vocabulary



Video Games: Attitudes, Beliefs, and Actions

Some studies:

Greater levels of hostility

More arguments

More fights

Lower empathy

Sleep deficits

Some studies:

Higher problem solving

Multiple strategies

Greater resiliency

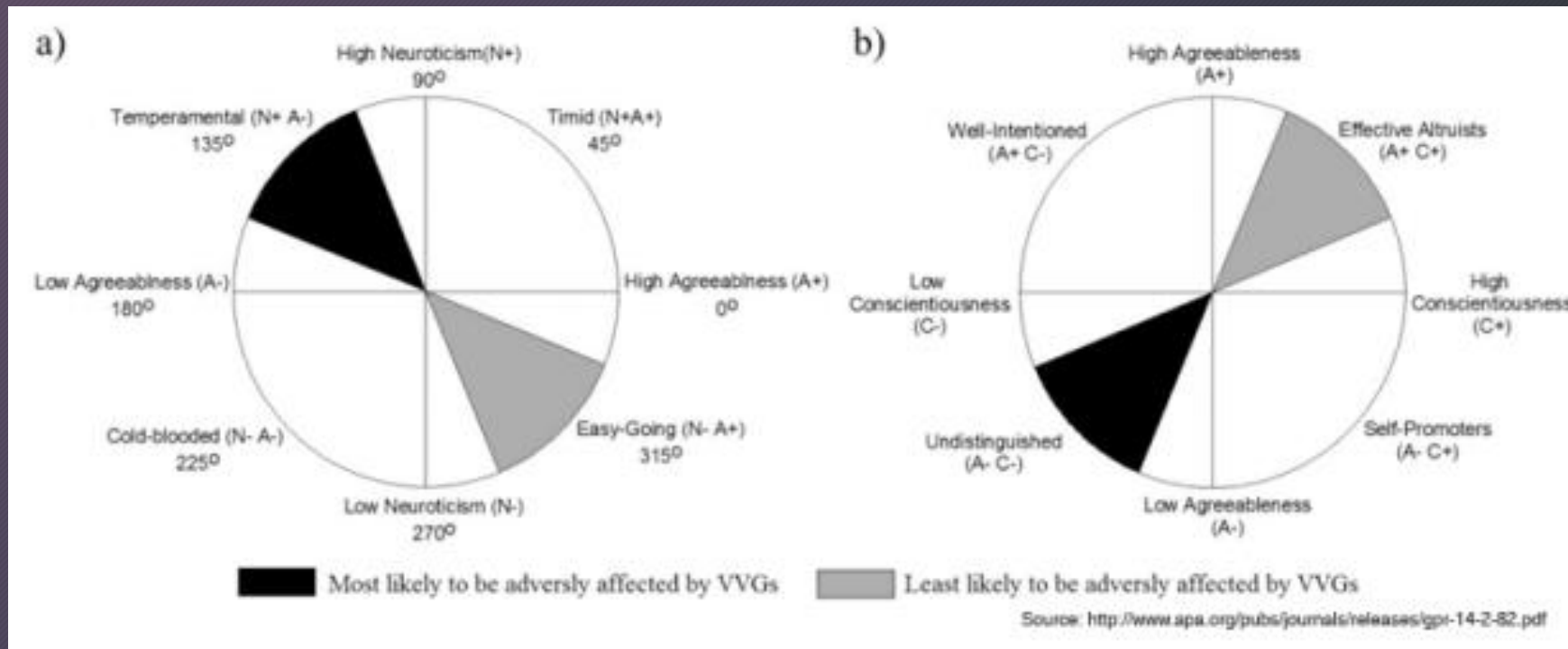
Improved detail awareness

Better eye hand coordination

Sleep deficits

Antisocial vs Prosocial

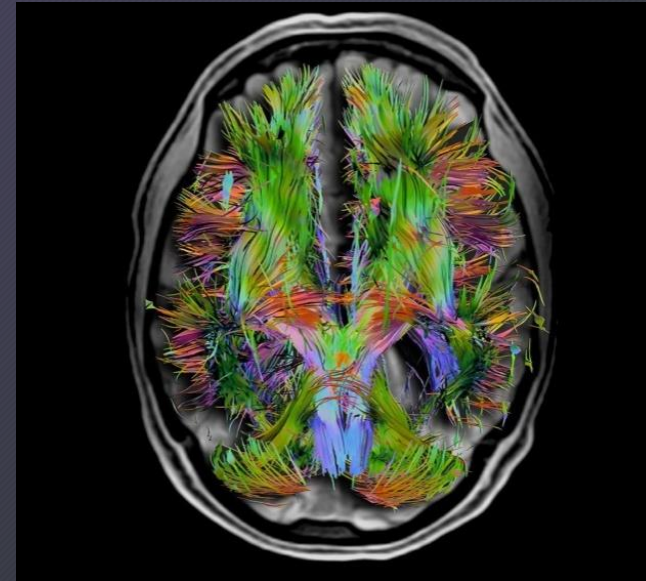
- Extended video game playing-violent content



- Variables, personality characteristics, game dynamics

Adolescent Brain Development

- Risk Taking
 - New Sites of Activity
 - Influence of Peers
 - Male/Female



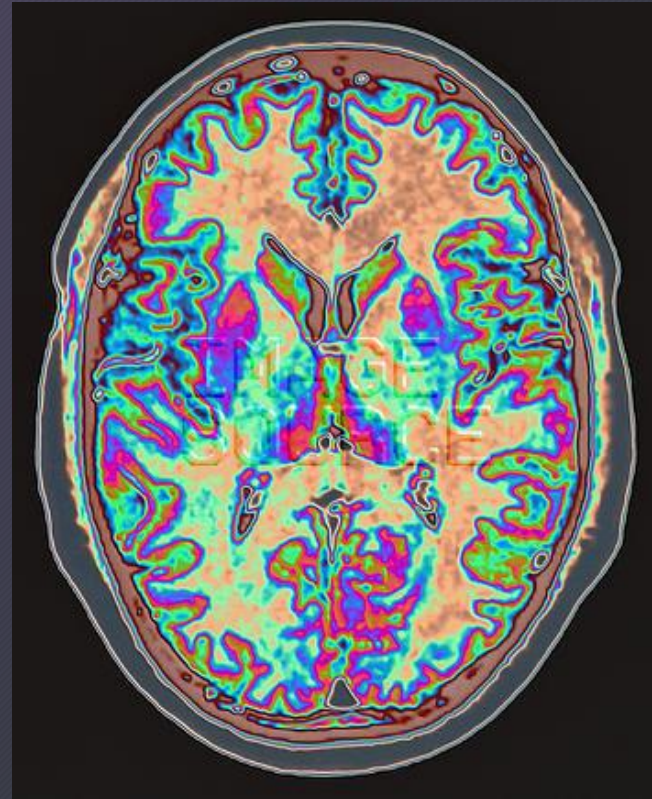
Internet addiction 8-10% of teen users

- Tolerance
- Withdrawal
- Loss of Control
- Continued Abuse in Spite of Consequences



Internet Addiction

- Brain Imaging
- 154 fourteen year old boys
- Excessive Gaming
- Changes to Ventral Striatum



Preventing damage from peers

- CYBERBULLYING ON THE RISE
- 95% have seen it
- 55% see it regularly
- 66% have seen peers jump in
- 21% admit to it

Preventing damage from peers

- Emotional Intensity
 - 2 to 4 Times
 - More Frequent Change
 - Male/Female
- Legitimate/Normal



. Preventing damage from peers

- Emotional Intensity

- Mirror, Mirror

- AA sites



- Male/Female
Brain Differences



Girls vs Boys

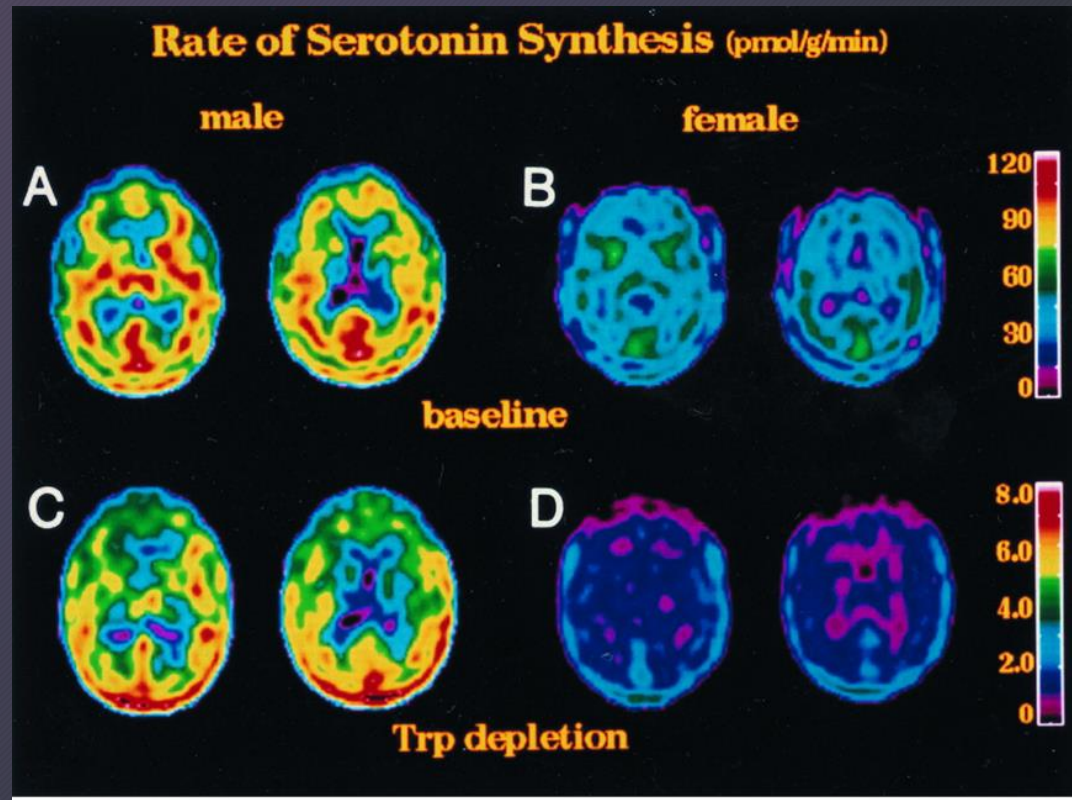
Facebook dep

Social Media A ty



Girls vs Boys

- Depression
- Serotonin Synthesis

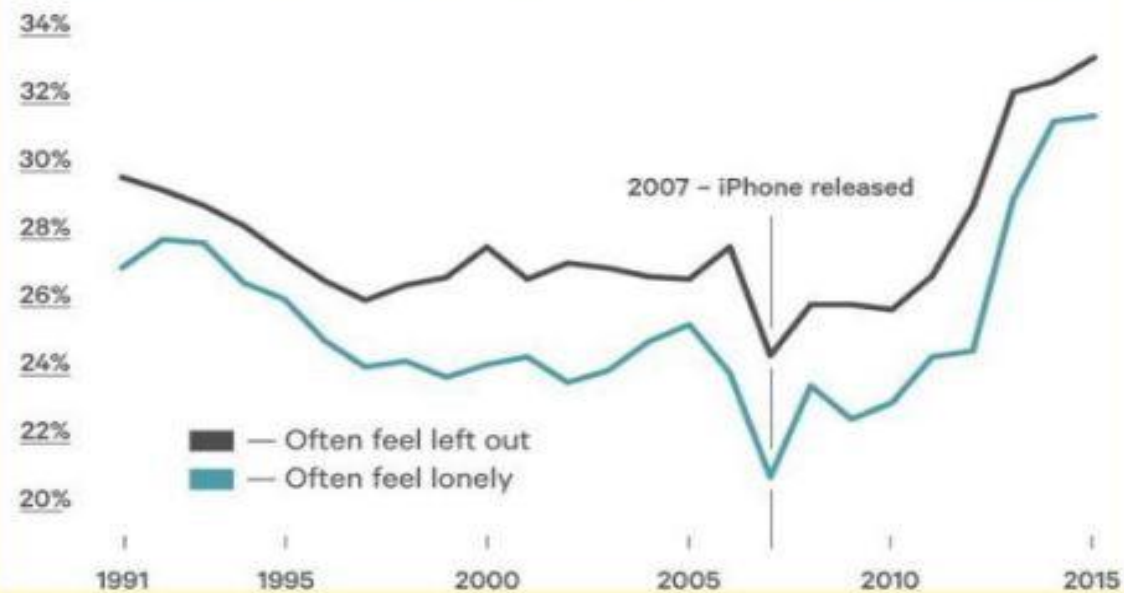


iGen

5

More Likely to Feel Lonely

Percentage of 8th-, 10th-, and 12th-graders who agree or mostly agree with the statement "I often feel left out of things" or "A lot of times I feel lonely"



BUT, Whatabout

- Przybylski, and Weinstein Oxford
- Moderate screen time, less than 3 hrs daily

Slight increase in mental health

Preventing Damage Done By Peers

- Intentional Meanness
 - 30% plus
- Social Media Revenge
 - Evening the Score

Identifying negative behaviors

Intentional Meanness

Public put down, joke, disparagement

Relative equality, friendship

Good for brief uptick in social status

Reflective remorse

- As many as 30%
- Males-26% Females-24% H-T

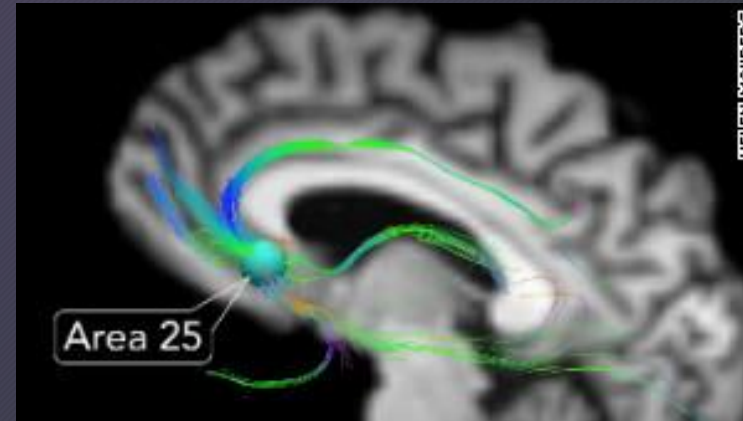


Outcomes of Cyberbullying

- Negative Emotions and Stress Chemistry

Change in Area 25

- Sleep Disorders
- Low self esteem
- Depression
- Suicide



Outcomes of Cyberbullying

- Depression
 - 2-3x the risk for depression
 - Higher levels of worthlessness, powerless
 - Increase in social anxiety, hypervigilance
- Decrease in academic performance



Suicide as cause of death

10 Leading Causes of Death by Age Group, United States – 2013

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 4,758	Unintentional Injury 1,316	Unintentional Injury 746	Unintentional Injury 775	Unintentional Injury 11,619	Unintentional Injury 16,209	Unintentional Injury 15,354	Malignant Neoplasms 46,185	Malignant Neoplasms 113,324	Heart Disease 488,156	Heart Disease 611,105
2	Short Gestation 4,202	Congenital Anomalies 476	Malignant Neoplasms 447	Malignant Neoplasms 448	Suicide 4,878	Suicide 6,348	Malignant Neoplasms 11,349	Heart Disease 35,167	Heart Disease 72,568	Malignant Neoplasms 407,558	Malignant Neoplasms 584,881
3	Maternal Pregnancy Comp. 1,595	Homicide 337	Congenital Anomalies 179	Suicide 386	Homicide 4,329	Homicide 4,236	Heart Disease 10,341	Unintentional Injury 20,357	Unintentional Injury 17,057	Chronic Low. Respiratory Disease 127,194	Chronic Low. Respiratory Disease 149,205
4	SIDS 1,563	Malignant Neoplasms 328	Homicide 125	Congenital Anomalies 161	Malignant Neoplasms 1,496	Malignant Neoplasms 3,673	Suicide 6,551	Liver Disease 8,785	Chronic Low. Respiratory Disease 15,942	Cerebro-vascular 109,602	Unintentional Injury 130,557
5	Unintentional Injury 1,156	Heart Disease 169	Chronic Low. Respiratory Disease 75	Homicide 152	Heart Disease 941	Heart Disease 3,258	Homicide 2,581	Suicide 8,621	Diabetes Mellitus 13,061	Alzheimer's Disease 83,786	Cerebro-vascular 128,978
6	Placenta Cord. Membranes 953	Influenza & Pneumonia 102	Heart Disease 73	Heart Disease 100	Congenital Anomalies 362	Diabetes Mellitus 684	Liver Disease 2,491	Diabetes Mellitus 5,899	Liver Disease 11,951	Diabetes Mellitus 53,751	Alzheimer's Disease 84,767
7	Bacterial Sepsis 578	Chronic Low. Respiratory Disease 64	Influenza & Pneumonia 67	Chronic Low. Respiratory Disease 80	Influenza & Pneumonia 197	Liver Disease 676	Diabetes Mellitus 1,952	Cerebro-vascular 5,425	Cerebro-vascular 11,364	Influenza & Pneumonia 48,031	Diabetes Mellitus 75,578
8	Respiratory Distress 522	Septicemia 53	Cerebro-vascular 41	Influenza & Pneumonia 61	Diabetes Mellitus 193	HIV 631	Cerebro-vascular 1,687	Chronic Low. Respiratory Disease 4,619	Suicide 7,135	Unintentional Injury 45,942	Influenza & Pneumonia 56,979
9	Circulatory System Disease 458	Benign Neoplasms 47	Septicemia 35	Cerebro-vascular 48	Complicated Pregnancy 178	Cerebro-vascular 508	HIV 1,246	Septicemia 2,445	Septicemia 5,345	Nephritis 39,080	Nephritis 47,112
10	Neonatal Hemorrhage 389	Perinatal Period 45	Benign Neoplasms 34	Benign Neoplasms 31	Chronic Low. Respiratory Disease 155	Influenza & Pneumonia 449	Influenza & Pneumonia 881	HIV 2,378	Nephritis 4,947	Septicemia 28,815	Suicide 41,149

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



School or Agency Response

- Check Policy
- Contact App Developer
- Take Steps
- Everyday reminders



IN *this*
CLASSROOM
WE DO SECOND CHANCES
We apologize
we forgive
We respect each other
We never give up
WE KEEP OUR PROMISES
we encourage one another
WE LAUGH OFTEN
WE BELONG
We are a **FAMILY**

School District or Agency Policies

- Choices and Consequences
 - Immediate
 - Proportionate
 - Finite

SECURITY

- Help your students/clients/children understand what information should stay private.
- Tell them why it's important to keep some things — about themselves, family members, and friends — to themselves.
- What information can be found in photos
- Information like their asl, Social Security number, street address, phone number, passwords should remain private



SECURITY

- Talk to your students/children/clients about avoiding sex talk online.
- Research shows that teens who don't talk about sex with strangers online are less likely to come in contact with predators. In fact, researchers have found that predators usually don't pose as children or teens, and most teens who are contacted by adults they don't know find it creepy.
- Teens should not hesitate to report, ignore or block them.
- Tell your students/clients Not to Forward Sexual Photos

Information for Parents

- Parental controls
- Parental access
- Parent Education
 - Articles, Videos
 - The Online Mom
 - She Knows



Adults can influence Online Behaviors

- Once you post, you lose control
- Golden Rule
- The ones you love
- Don't hit send-----until you're sure



Priorities



What can we do?

- Support research and promote education
- Influence policy makers
- Teach parents and empower them
- Practice what you preach
- Come, play, put your electronic device away

