



Technology & Teens

Paul J. Marcille, Ph.D.
Licensed Psychologist



Goals of Today's Talk

To introduce some of the latest findings concerning

- Teens and technology and addiction
 - Social media
 - Gaming
 - Sexting
 - Multitasking
 - Impact on social skills and empathy
- The neuropsychology of behavioral addictions
 - The pleasure pathways in the brain
 - Concepts of addiction



Goals of Today's Talk

- Treatment approaches to tech addiction
 - Residential & inpatient programs
 - Intensive outpatient programs
 - Cognitive Behavior Therapy for Internet Addiction
 - Motivational interviewing
 - Cognitive behavior therapy
 - Harm reduction
 - Reality therapy
 - Behavioral Design
- Resources for professionals and parents



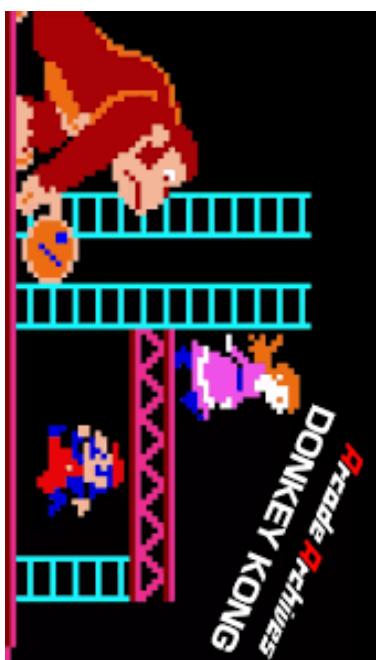
How has technology changed our lives and the lives of our kids?

Paul J. Marcille, Ph.D. February 2020



Benefits of Tech

- Improvements in communication
- Improvements in entertainment
- Improvements in education and literacy
- Improvements in health care
- Improvements in manufacturing, delivery of services, increases in efficiency,
- Improvements in safety, transportation, etc.





1st generation Iphone issued in June 29, 2007

Just 12.5 years ago!!

Challenge





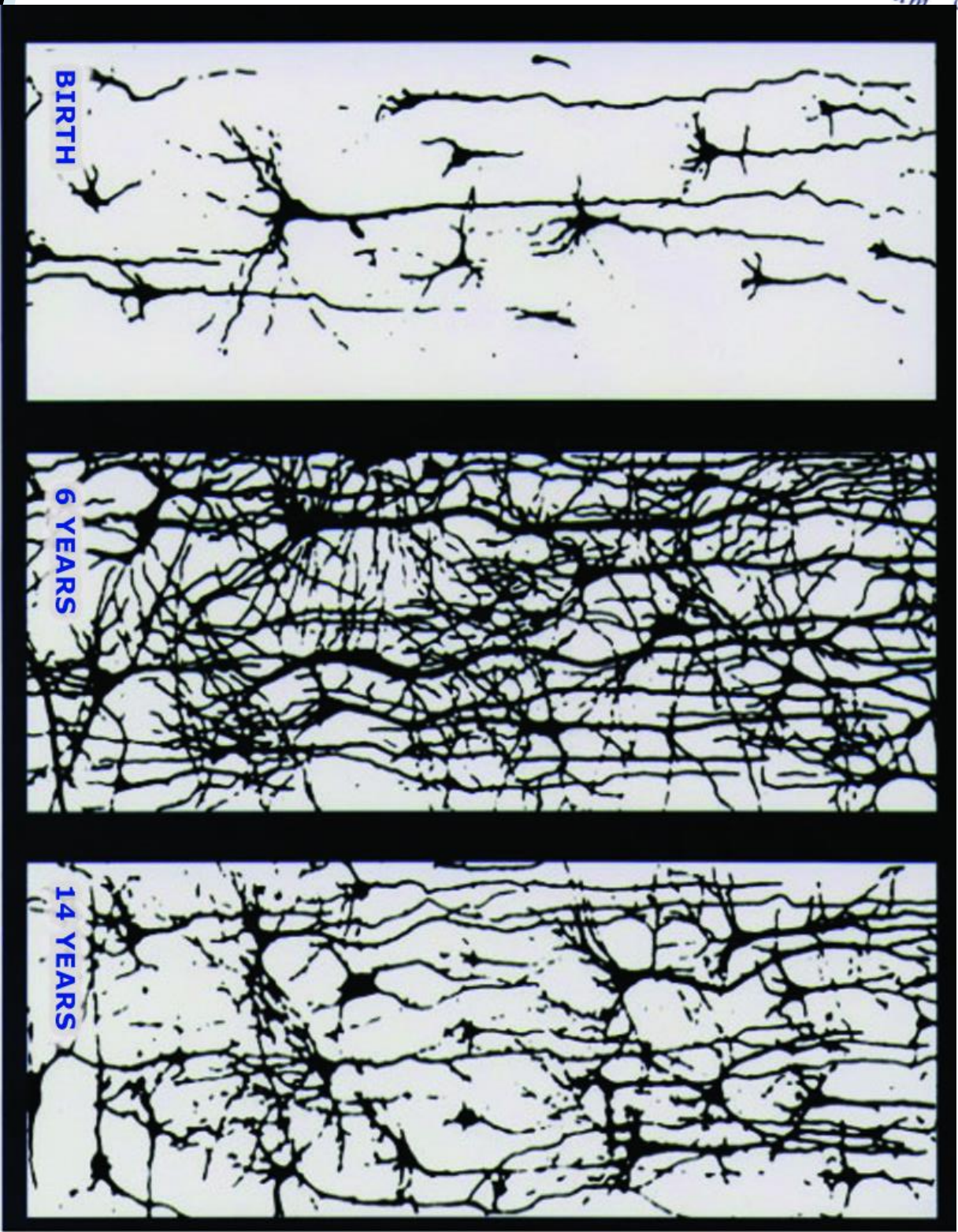
The addictive nature of Technology

Paul J. Marcille, Ph.D. February 2020



The brains of children and adolescents go thru tremendous changes in the first few years of life and then again in adolescence.





Internet users worldwide number 4.4 billion

Social media users worldwide number 3.5 billion

Mobile phone users number 5.1 billion

The current world population is 7.8 billion





84% of US teenagers now have their own phones





2019

THE COMMON SENSE CENSUS: MEDIA USE BY TWEENS AND TEENS

Amount of daily screen use, not including for school or homework



Tweens:

4 hours, 44 minutes



By socioeconomic status

Tweens in higher-income homes: **3:59**

Tweens in lower-income homes: **5:49**

Young people in lower-income homes use nearly two more hours of screen media a day than their peers in higher-income homes.

Note: "Lower income" is <\$35,000; "higher income" is \$100,000+ per year.



Teens:

7 hours, 22 minutes

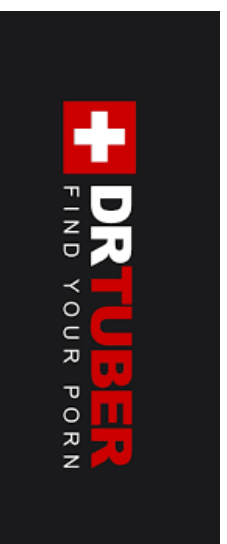


24% of teens are online “almost constantly

50% of US teens report “feeling addicted” to their phones

32% of young people have posted personal information

90% of boys and girls have viewed pornography before the age of 18 and most by age 11!



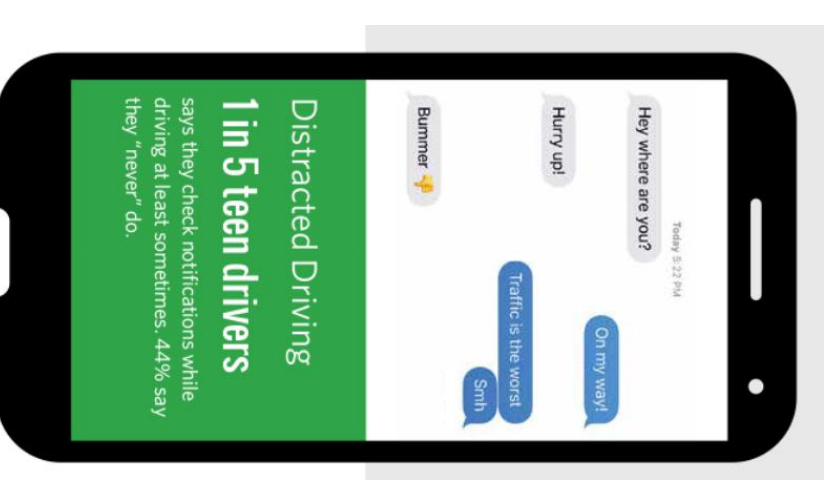


Almost half of college students report that they can not go more than 10 minutes without needing to check their devices

And over half report that their grades suffer because of screen time.

Teens who say they use another medium “most” or “some” of the time while: (Rideout, Foehr, & Roberts, 2010)

- Listening to music: 73%
- Using a computer: 66%
- Watching TV: 68%
- Reading: 53%
- Playing video games: 48%



PHOMES DOWN

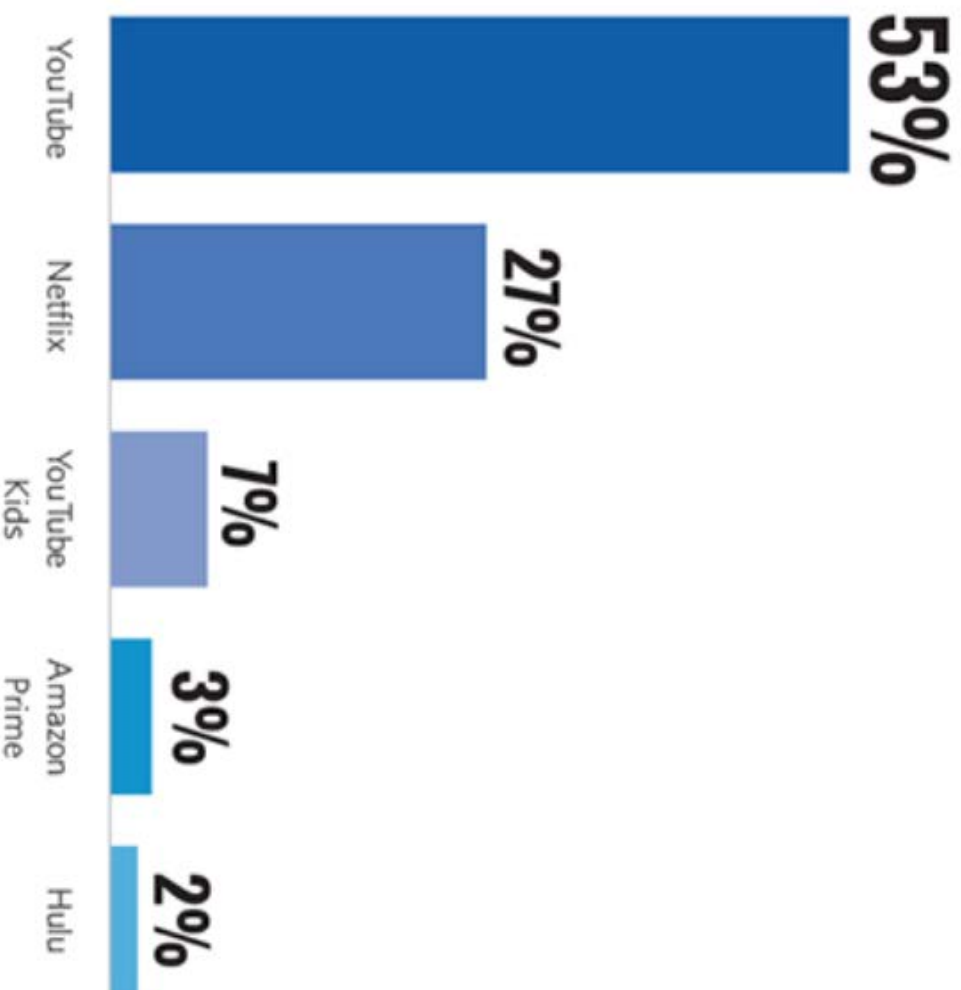


SOCIAL EXPERIMENT



For tweens, YouTube dominates the online video space.

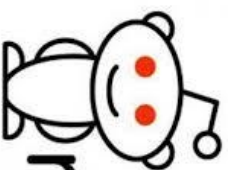
Online video or subscription platforms used "the most" by 8- to 12-year-olds



Social Media are websites and applications that enable users to create and share content and to participate in social networking.



Tik Tok



reddit

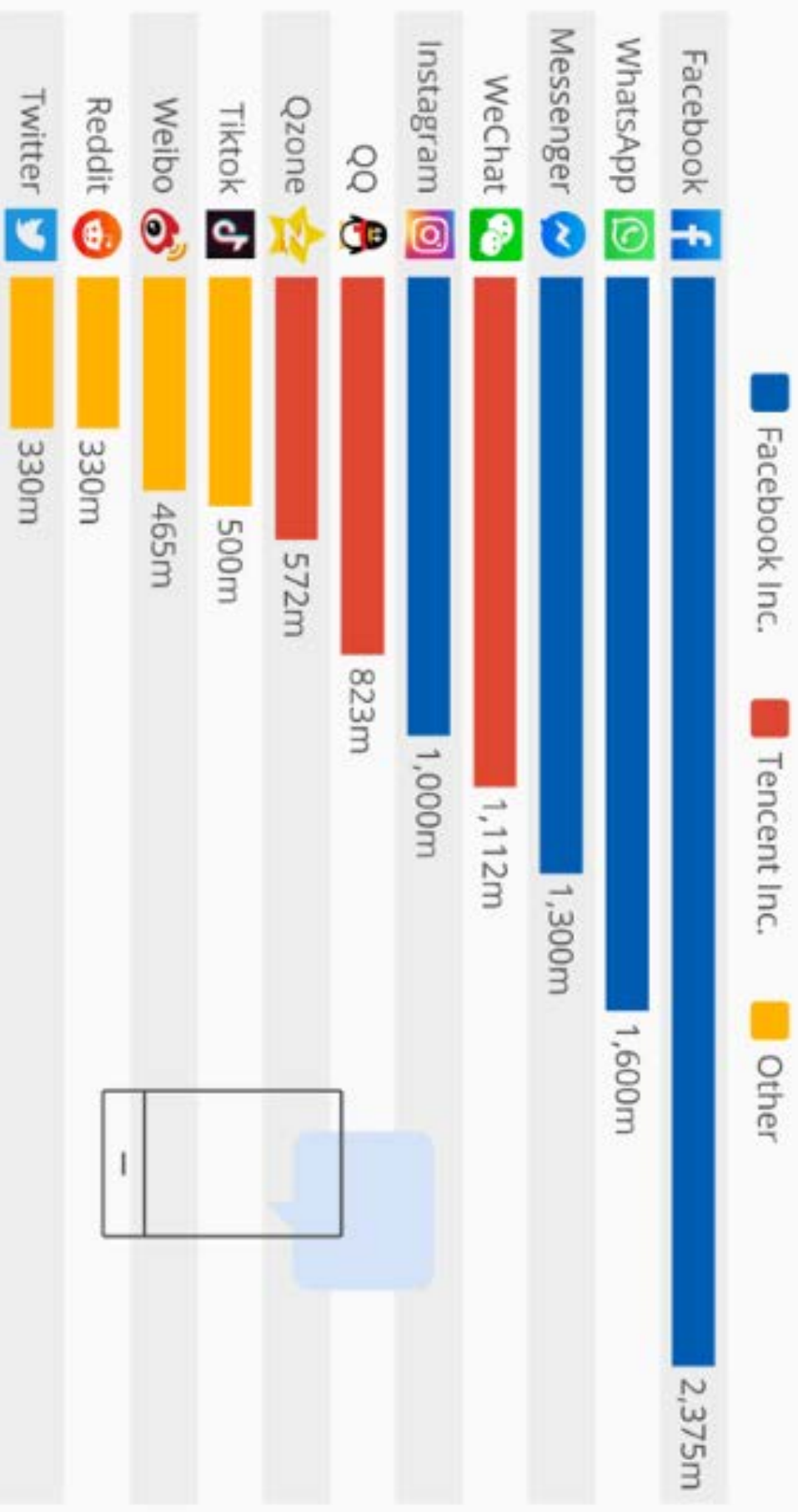


Instagram



Facebook Inc. Dominates the Social Media Landscape

Monthly active users of selected social networks and messaging services worldwide*



* July 2019 or latest available

@StatistaCharts

Source: Company data via DataReportal Q3 Global Digital Statshot





Bullying



Instagram

59 percent of teens have been bullied online and most on Instagram

Instagram provides powerful tools for kids to be cruel to one another.

The velocity and size of the distribution mechanism allows rude comments or harassing images to go viral within hours.



Snapchat is a mobile messaging application used to share photos, videos, text, and drawings.

It has become hugely popular in a very short space of time, especially with young people.

Sexting – sharing photos, videos, posts of an inappropriate sexual nature.



Likes – a powerful reward and stimulant.

Justin Rosenstein, the man who invented the Facebook “Like” button has removed the app from his mobile phone and regrets and fears the psychological effects the app is having on people around the world.



Social Media creates a specific type of anxiety called FOMO, “fear of missing out.”

The worry that a friend might be upset if you don’t respond to a message or post right away.

It can also be feeling left out if everyone’s posting pictures of a party or event a teen didn’t attend wasn’t invited to.



Microsoft



The Developers of Tech fear for their own children

Steve Jobs didn't allow his own children to use his devices

Bill Gates limited screens, banned mobile phones at the table and didn't let his children have them until they were 14

Mark Zuckerberg has written an open letter to his baby daughter imploring her not to grow distracted by tech

facebook



Apple, Microsoft & Google, etc, have made enormous efforts to get their products into schools

MacBooks

Ipads

Chrome Books

Google Docs

Google Sheets

Learning management systems





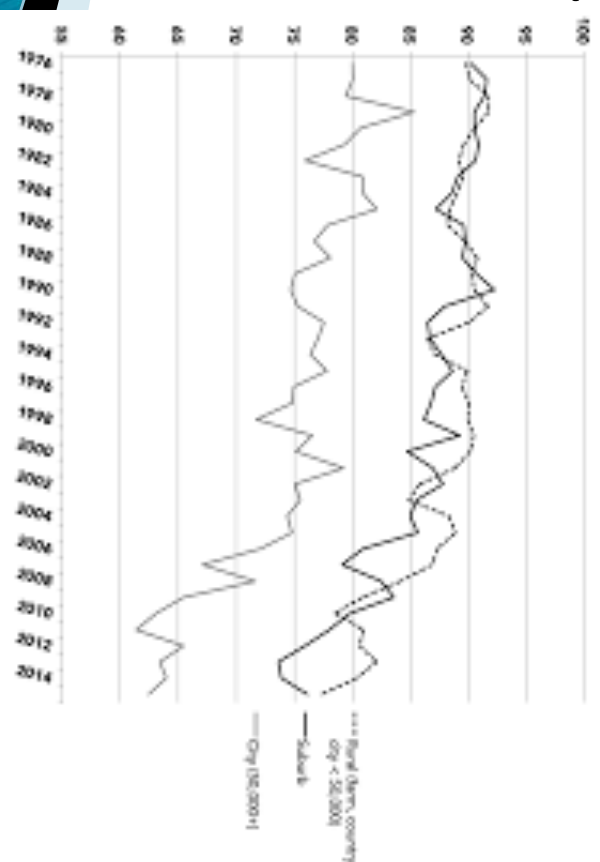
Dr. Jean Twenge found in a national survey of one million high school teens that those who spend more time seeing their friends in person, exercising, playing sports, attending religious services, reading or even doing homework are happier and more emotionally stable.

Teens who spent more than five hours a day online were twice as likely to be unhappy as those who spent less than an hour a day.



Dr. Twenge has found that teens' happiness plummeted after 2012, when the majority of Americans became smartphone owners.

There were decreases in teens' self-esteem and their satisfaction with their lives, their satisfaction with friends, the amount of fun they were having, and their lives as a whole.





This “inflection” point was associated with increases in teen mental health issues, including depressive symptoms, major depression, self-harm and suicide.

Compared to the optimistic and almost relentlessly positive millennials, the iGen is markedly less self-assured and more are depressed.



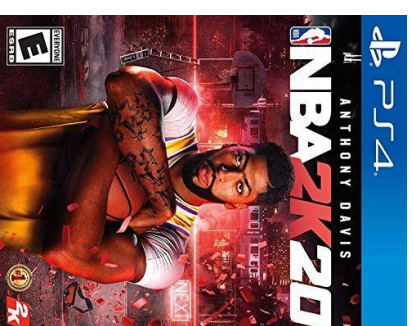
Lower SES and minority teens are particularly vulnerable to the impact of social media.

One quarter of such teens feel that they are “nothing” without their cell phones, and nearly half said they could not do without them for a day.



Video Games

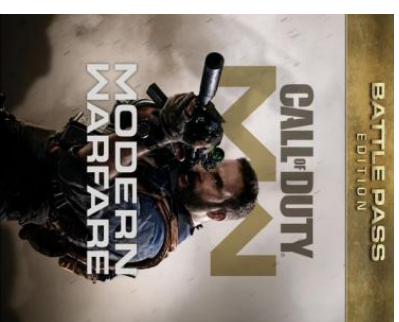
97% of teens play video games



99% of boys compared to 94% of girls



50% teens say they played a game "yesterday"



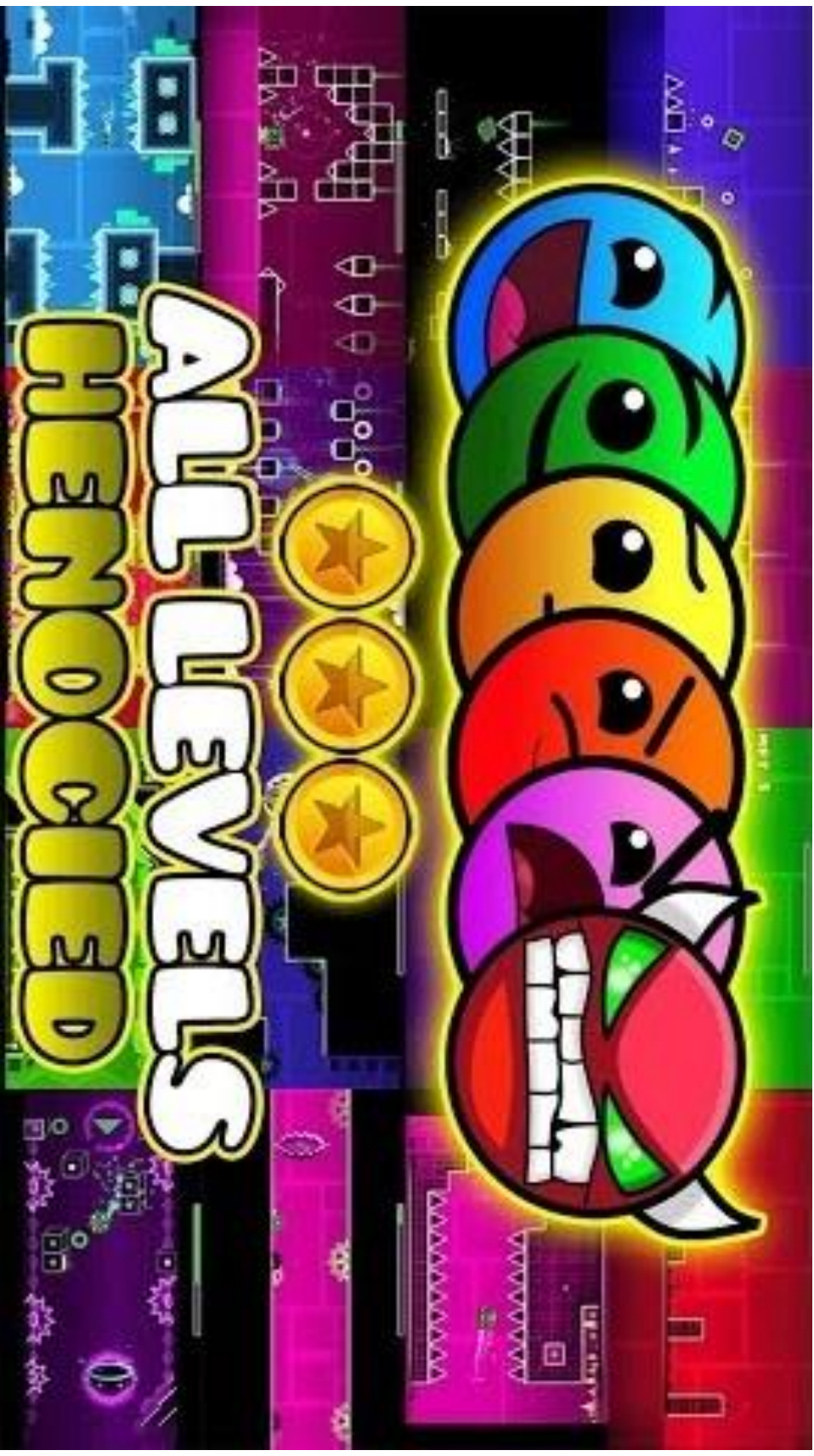


Video Games

What makes video games so addictive:

1. Easily learned and mastered at least at the beginner's level.
2. Provides progressive points, rewards, reinforcement.
3. Many are social in nature.

Geometry Dash



Video Games







Social Skills and Empathy

Empathy is the ability to understand and share the feelings of others

Narcissism among young people seems to be increasing, while empathic traits have been on the decline.

From 1979 to 2009, American college students' scores on two measures of empathy dropped sharply; the steepest decline occurred from 2000 onward.



Social Skills and Empathy

Interacting with others through screens and text leaves out many social cues we receive in person.

Empathy appears to develop in the context of the many cues we get during face-to-face communication.



Social Skills and Empathy

In one study of 11- and 12-year-olds who spent five media-free days at an outdoor educational camp, their recognition of nonverbal emotion cues improved significantly more than those of their peers who attended school and used media as usual.



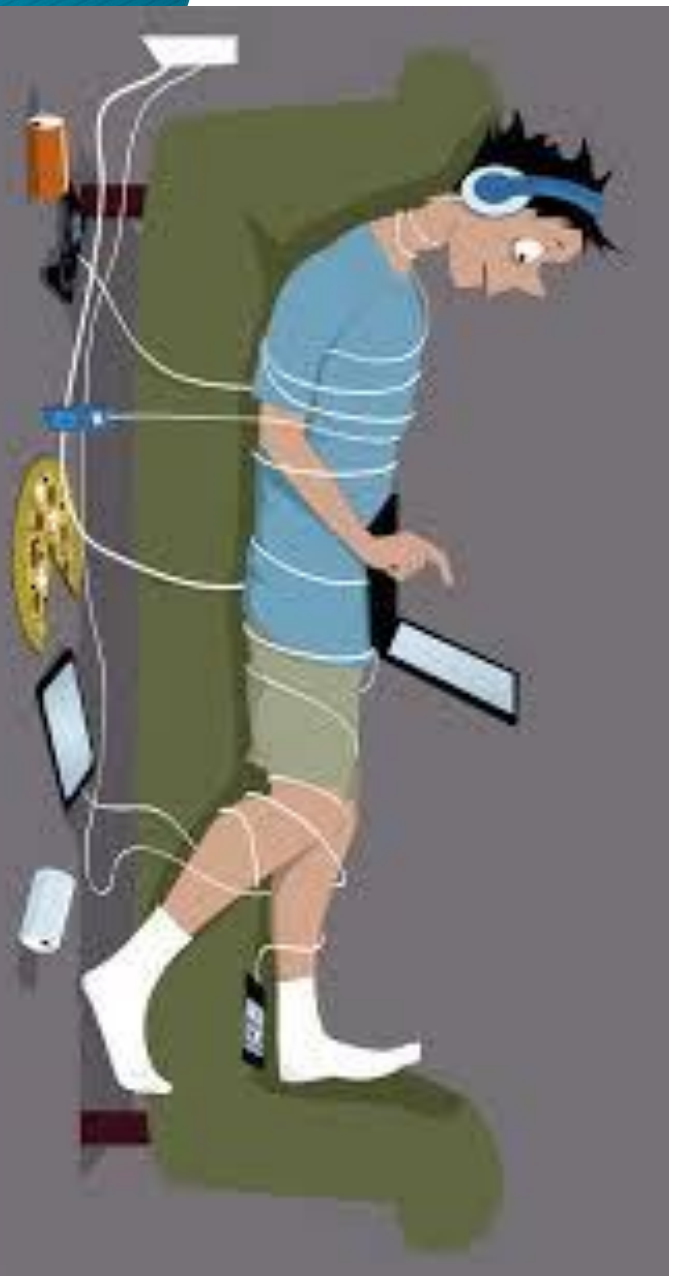
Let's not forget that

Parents buy devices, games, and apps, and control their child's access to technology

Parents also model relationships to electronics.

Teens are fully aware of how much time their parents spend with technology and not with them.

Internet/Tech addiction is a potentially serious condition which needs clarification and additional study about the impact on young people's physical, cognitive, social, and emotional development.





Internet addiction” refers to

- a pattern of excessive and compulsive tech-related behaviors resulting in
- negative outcomes in multiple areas of life

Also referred to as Internet Addiction Disorder, Tech Addiction, Compulsive Internet Use (CIU), Problematic Internet Use (PIU), iDisorder or Problematic Media Use.



26% of American adolescents and college students report excessive internet and tech

Disagreement about whether excessive and uncontrollable use of technology and the internet is an addiction in the same way we view substance abuse.

Or is it a behavioral disorders, in which individuals pathologically seek out “rewarding stimuli” despite negative outcomes.



Other problematic uses of online services by teens

Adult dating sites

Sexting



Criteria for Internet/Tech Addiction Disorder

1. Preoccupation with online activities
2. Need to be online for increased amounts of time
3. Has made unsuccessful efforts to cut back
4. Is restless, moody, depressed, or irritable when attempting to reduce online activities
5. Regularly stays online longer than intended



1. Has jeopardized or risked the loss of a educational and relationships because of the Internet/tech use
2. Lies about the extent of the use of tech
3. Uses the Internet/tech as a way of escaping from problems



Psychological Symptoms of Internet/Tech Addiction

- Depression
- Dishonesty
- Feelings of guilt
- Anxiety
- Feelings of euphoria when using the computer/phone
- Inability to prioritize or keep schedules or promises
- Isolation, defensiveness, anger and agitation
- Mood swings, boredom without tech



Behavioral Symptoms of Internet/Tech Addiction

- Social isolation
- Inability to manage time
- Avoidance of work, school work, chores, etc.
- Poor academic performance
- Poor social skills
- Excessive procrastination



Physical Symptoms of Internet/Tech Addiction

- Backache
- Carpal tunnel syndrome
- Headaches
- Insomnia
- Poor nutrition
- Weight gain or loss
- Declining physical activity
- Poor personal hygiene

Conflict in families

In an international survey of 6,117 8- to 13-year-olds and their parents 54% of children felt that their parents checked their devices too often and 32% felt unimportant when their parents were distracted by their phones.







What Is Addiction?



The DSM-5 specifically lists nine types of substance addictions alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, hypnotics, anxiolytics, stimulants, and tobacco.



What Is Addiction?

For purposes of our discussion today, I'd like to ask you to think of addiction not as a disease but rather as a behavior that is a natural part of how the brain functions, and that these behaviors become "addictions" or problematic, when we lose control of them.



What Is Addiction?

Some 20.5 million Americans had a substance use disorder making it more common than cancer.

More than a billion people smoke which is implicated in the top 5 causes of death



What Is Addiction?

It's important to never forget that what we find exciting, frightening, pleasurable, annoying, etc., are all the product of biochemical activity in our brains!



Hundreds of brain areas have evolved to perform different functions:

Parietal lobes: touch

Occipital lobes: vision

Hippocampus: memory

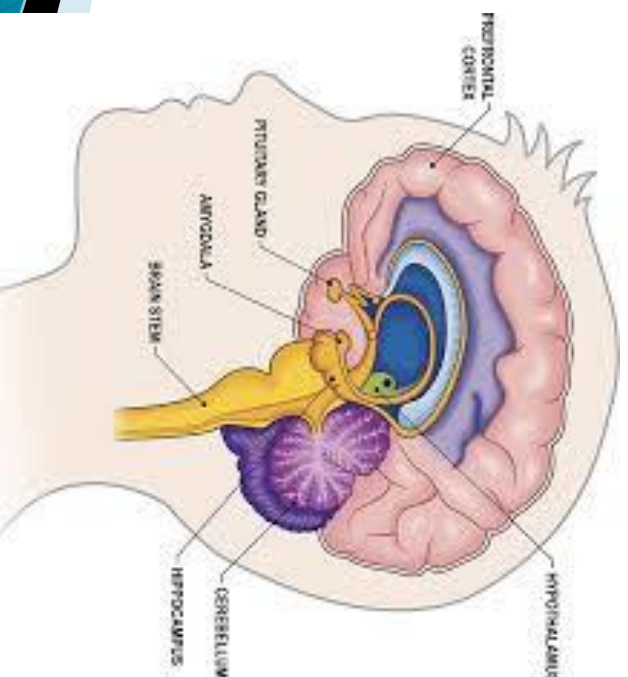
Frontal lobes: muscle movement

Temporal lobes: hearing

The Reward Pathway in the Brain

Where our most basic survival instincts occur, such as eating and mating. This is what has insured the survival of our species.

Virtually all pleasurable activities activate the reward pathway in the brain: sex, drugs, alcohol, food, gambling, shopping, the internet, games, chocolate, exercise, etc.



PATHWAYS TO CRAVING

Desire is triggered when dopamine, which originates near the top of the brain stem, travels through neural pathways to act on the brain. Drugs increase the flow of dopamine.

Ventral tegmental area (VTA)

Dopamine is produced here and flows outward along neurons distributed throughout the brain's reward system.

Brain stem

Basic visceral sensations and reactions to pleasure, such as smiling, originate from this hot spot.

Ventral pallidum

Animal experiments show that damaging this hot spot can turn something that once gave pleasure into a source of disgust.

Dorsal striatum

Neurons here help form habits by identifying enjoyable patterns, such as the anticipation of buying drugs.

Pretrontal cortex

The amino acid glutamate, produced here, interacts with dopamine to spark visualizations that cue cravings.

Amygdala

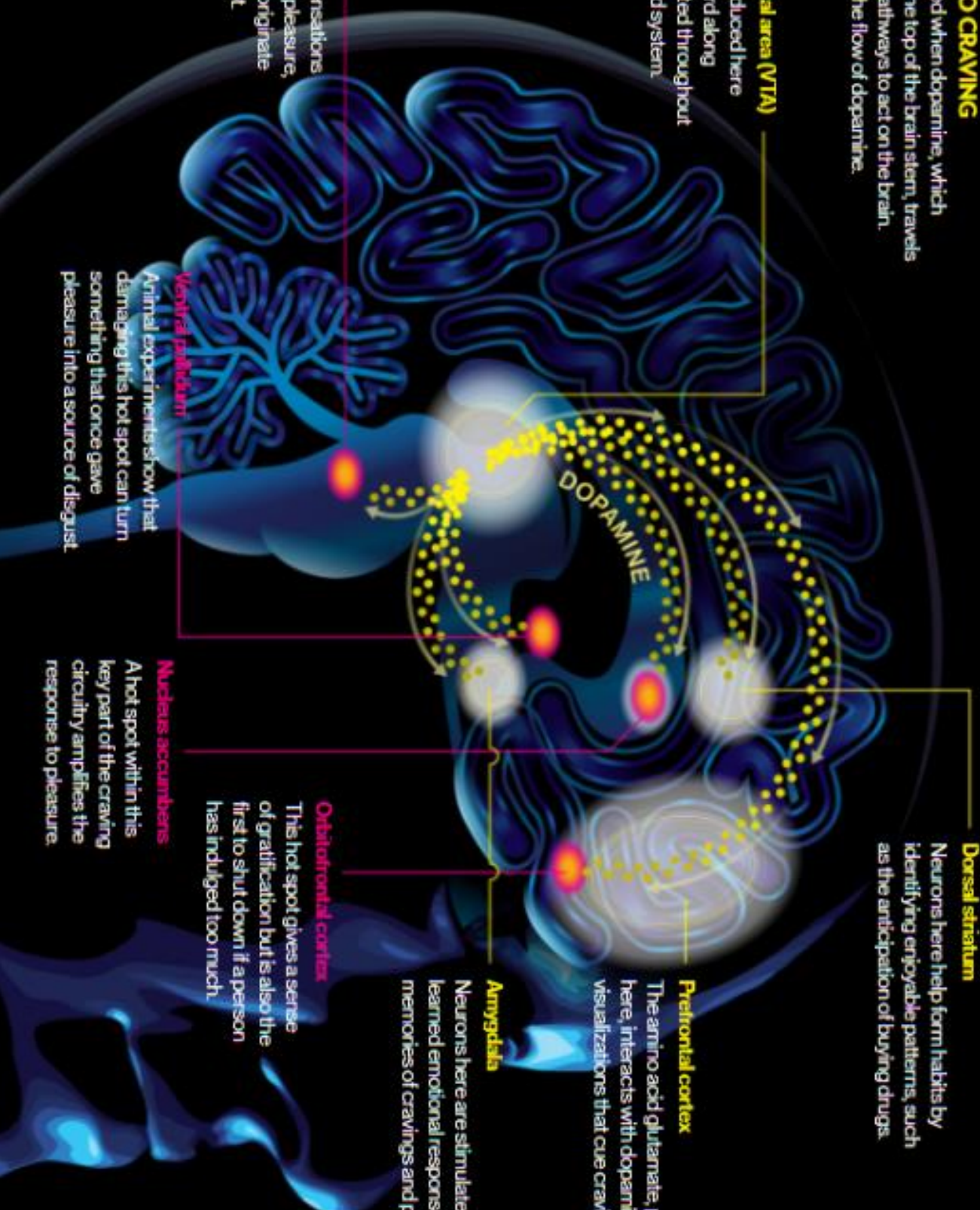
Neurons here are stimulated by learned emotional responses, such as memories of cravings and pleasure.

Orbitofrontal cortex

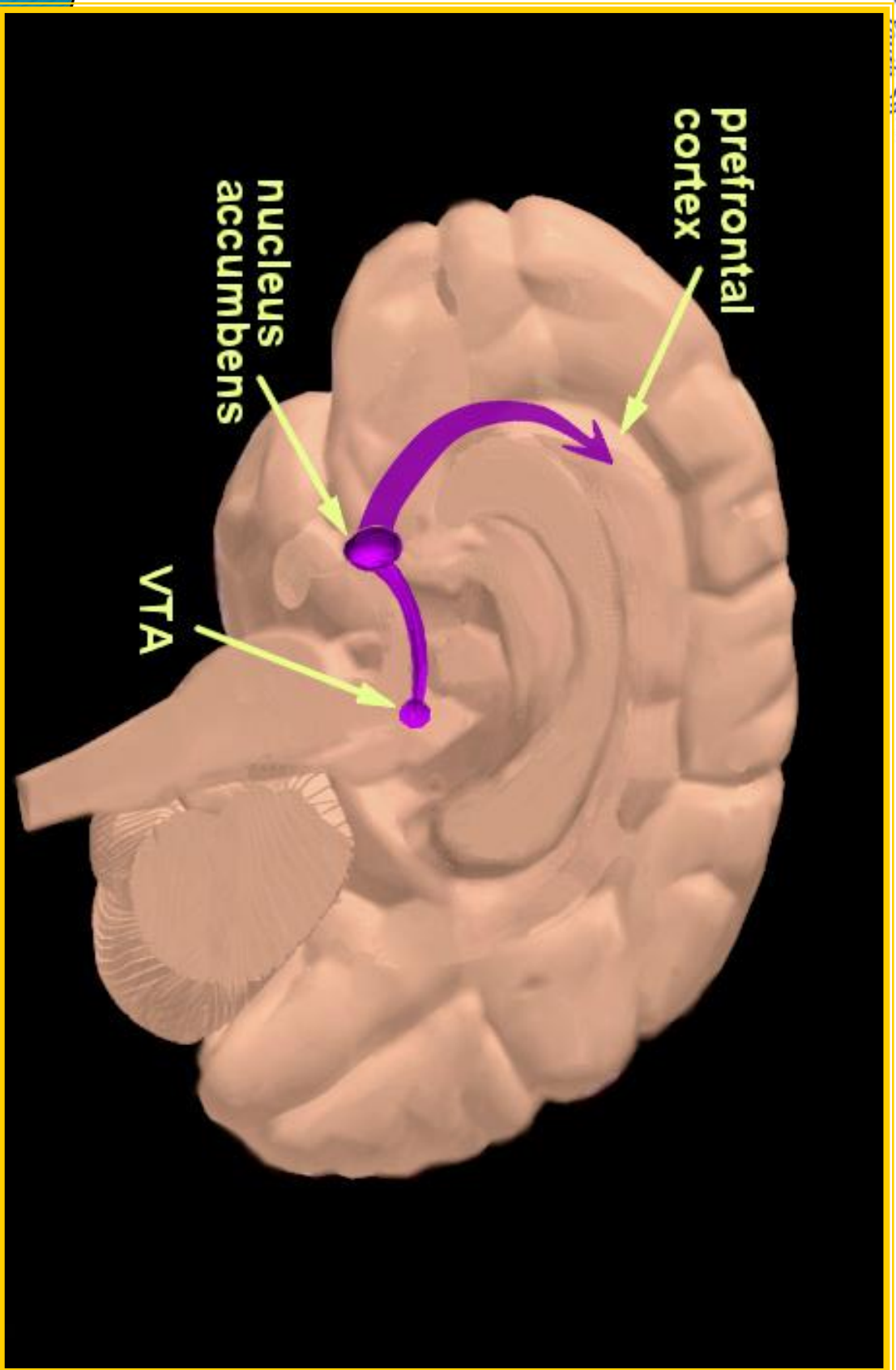
This hot spot gives a sense of gratification but is also the first to shut down if a person has indulged too much.

Nucleus accumbens

A hot spot within this key part of the craving circuitry amplifies the response to pleasure.



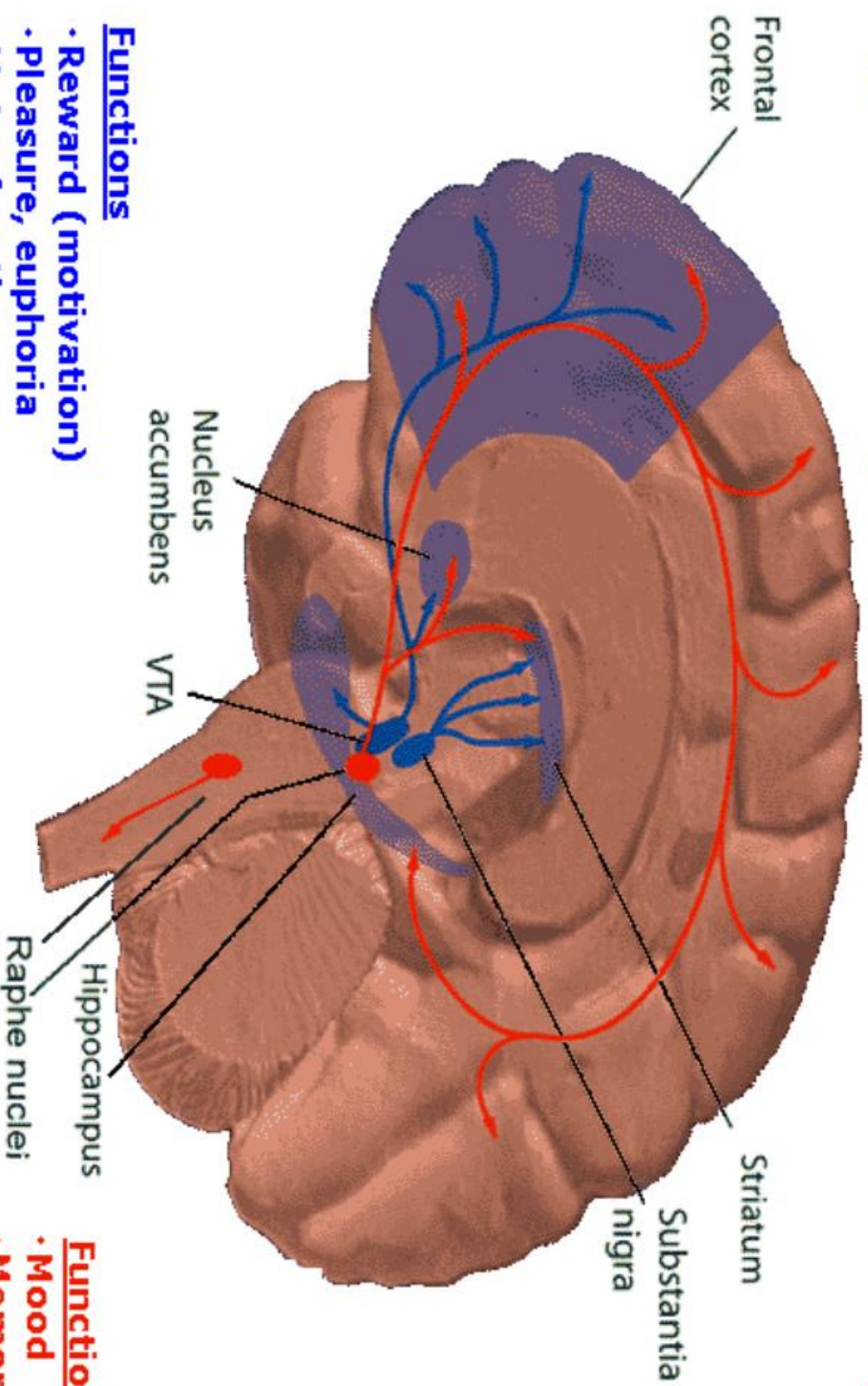
The Brain Pleasure Pathway



The Brain Contentment Pathway

Dopamine Pathways

Serotonin Pathways



Functions

- Reward (motivation)
- Pleasure, euphoria
- Motor function (fine tuning)
- Compulsion
- Perseveration

Functions

- Mood
- Memory processing
- Sleep
- Cognition



The Reward & Pleasure Pathways in the Brain

So 2 different neurotransmitters, Dopamine & Serotonin, and two different brain areas, the Ventral Tegmental Area and the Dorsal Raphe Nuclei, and Endogenous Opioid Peptides influence each other to produce pleasure and happiness and shape our behaviors.

Exposure to stimuli and cues that indicate the pleasurable activity will trigger the VTA outside of our conscious.



The Addicted Brain's Contentment Pathway

The addicted brain becomes “tolerant” to the opioid peptides, or the cocaine, heroin, sex, shopping, gaming, etc., and needs more and more to get the same effect - Tolerance

When this occurs, you go from wanting to do something to **NEEDING** to do something.

And when we don't have it, it hurts - Withdrawal

The Addicted Brain's Contentment Pathway





So what's the solution to addictive behaviors, such at those affecting our teens and us in regards to technology???

How do we treat these behaviors??



Abstinence is recommended by AA and NA for alcohol and drugs?

Is that a possibility with technology?



Approaches to treating tech/internet addiction

Inpatient programs

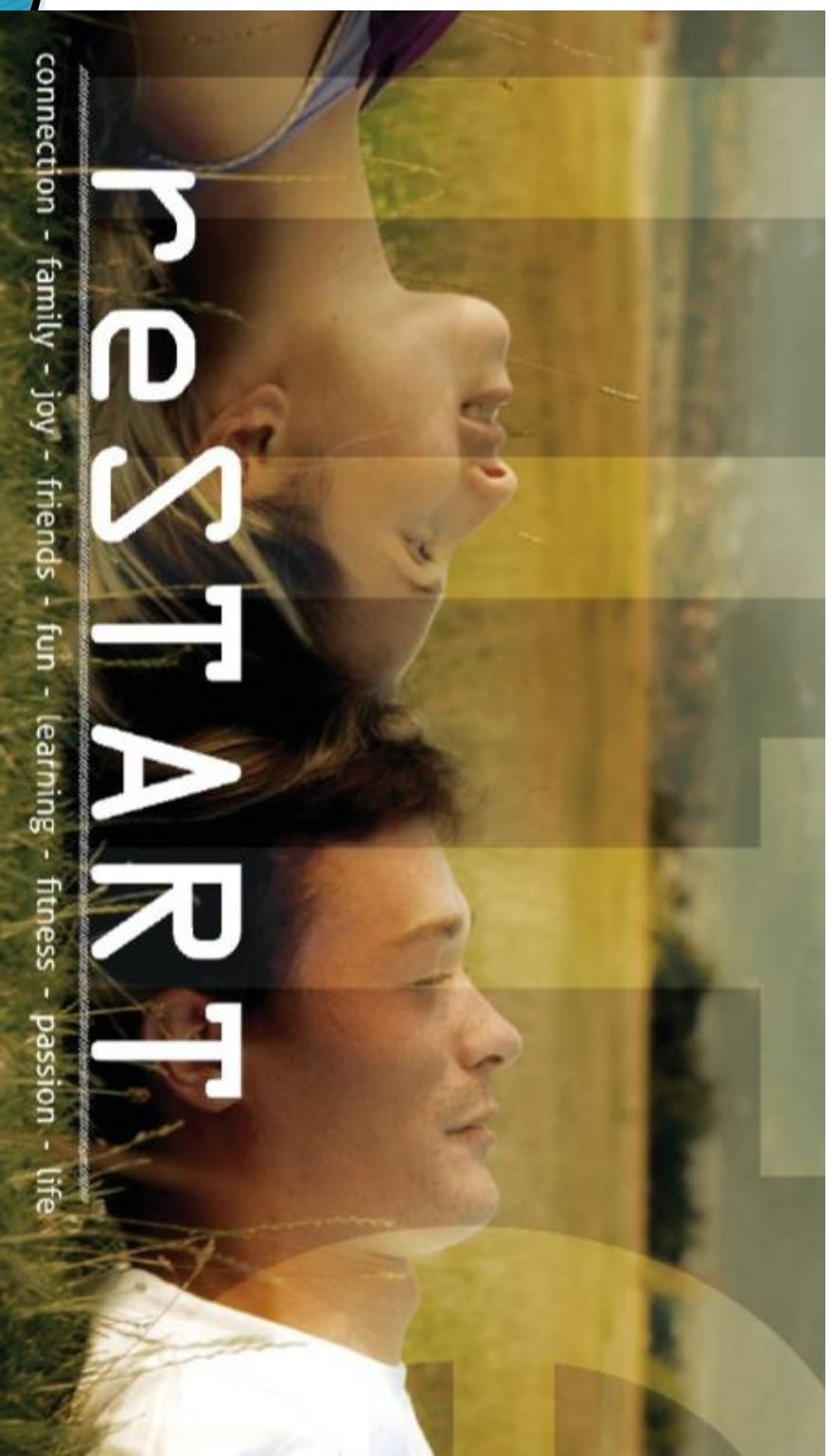
Intensive outpatient programs

Cognitive behavioral therapy for internet addiction

Behavioral design



Residential & Inpatient Programs



Paul J. Marcille, Ph.D. February 2020



reStart

A “Center for Digital Technology Sustainability”

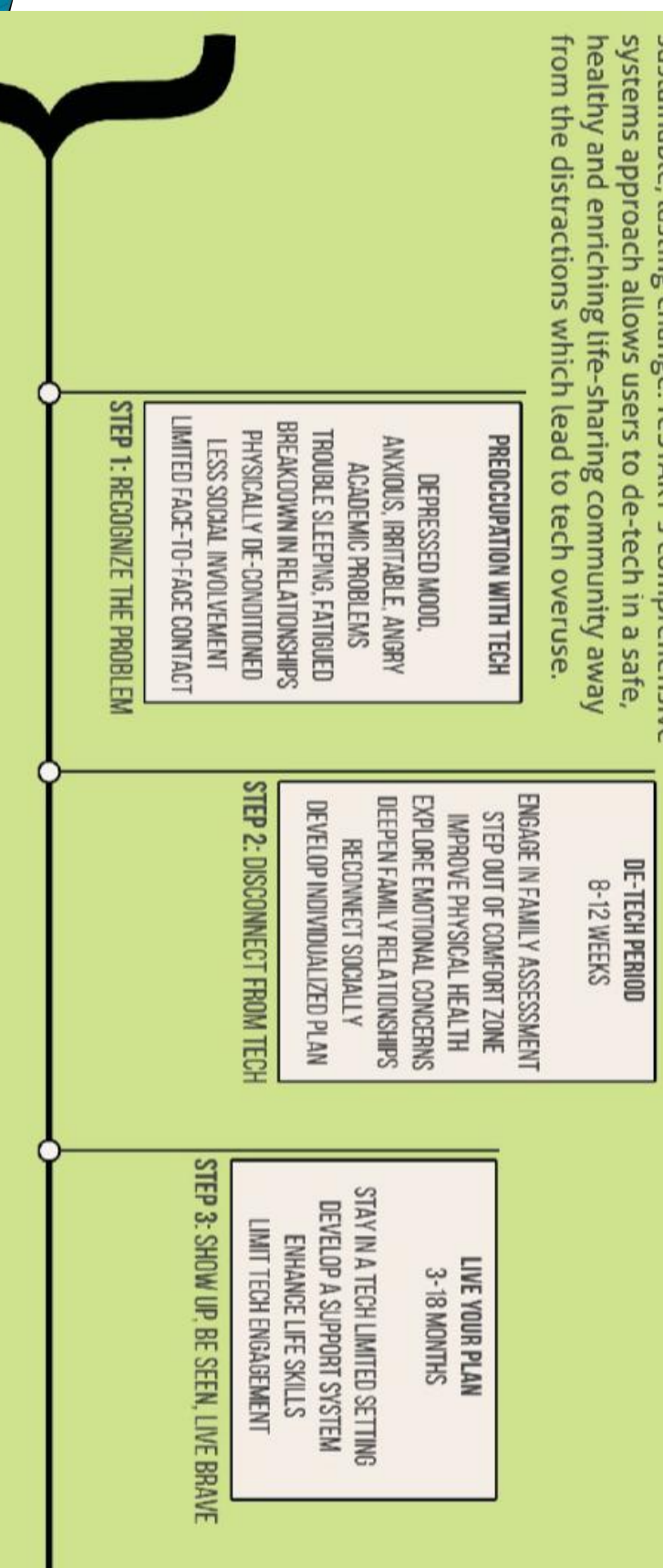
It is a “retreat” rather than an addiction treatment program whose goal is to teach teens to use technology in healthy and sustainable ways.

To learn problem solving and critical thinking around the use of technology.

reSTART

TREATMENT FOR PROBLEMATIC USE

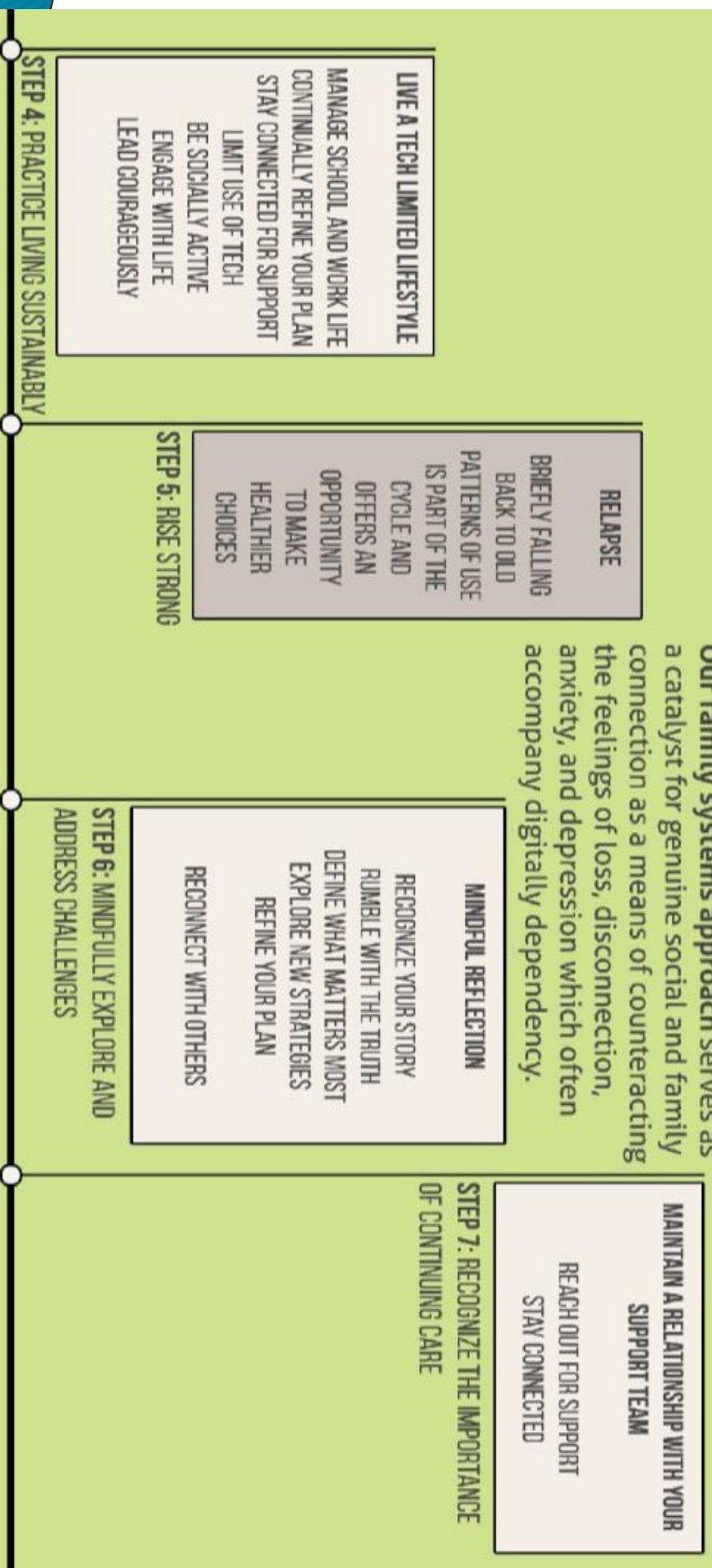
While there are many pathways to a healthier lifestyle, addressing problematic use is a critical aspect of sustainable, lasting change. reSTART's comprehensive systems approach allows users to de-tech in a safe, healthy and enriching life-sharing community away from the distractions which lead to tech overuse.



reSTART

7-STEP PROCESS

Our family systems approach serves as a catalyst for genuine social and family connection as a means of counteracting the feelings of loss, disconnection, anxiety, and depression which often accompany digitally dependency.





Bradford Regional Medical Center
A Kaleida Health Facility

Founded by Dr. Kimberly Young, who began studying and treating Internet Addiction in the mid-1900s.

The Digital Device Treatment is a 10-day intensive inpatient program providing individual, group and family therapy with aftercare planning. Family and referral involvement are key components.

3 days of detox followed by 7 days of cognitive-behavior therapy.



Intensive Outpatient Programs

IOP technology addiction treatment involves learning to moderate and control one's tech use and takes place in outpatient meetings and group sessions for teens between the ages of 13 and 17.

Designed to teach skills to develop a healthy relationship with technology to align their use with their lives and goals, instead of allowing it to take over.



Cognitive Behavior Therapy for Internet Addiction (CPT IA)

Involves

- Motivational Interviewing
- Cognitive Behavior Therapy
- Positive Psychology
- Reality Therapy



Motivational Interviewing

A goal-directed style of counseling that elicits behavior change by helping teens explore and resolve their ambivalence about technology.

Open-ended questions, giving affirmations, and reflective listening that is intended to engage teens in a constructive way rather than a confrontative one in order to evoke change.

Involves identifying external contingencies such as the potential of failing in school to mobilize values and goals to stimulate behavior change.



Motivational Interviewing

5 general principles

- Empathy through reflective listening.
- Identify discrepancy between teen's goals or values and their current behaviors.
- Avoid arguments and direct confrontations.
- Adjusts to resistance rather than opposing it directly.
- Supports self-efficacy and optimism.



Motivational Interviewing

How many hours per week do you currently spend online?

What applications do you use?

How has the gaming/social media/texting changed your life?

How do you feel when you're not online?

Any problems or consequences stemming from your tech use?

Anyone complained about how much time you spend online?

Any problems with relations as a result of tech use?



Cognitive Behavior Therapy for Internet Addiction

CBT-IA

Abstinence recovery models are not practical as tech has become such a salient part of our daily lives.

Research on internet/tech addiction has found that maladaptive behaviors and cognitive distortions are very prevalent and must be addressed.



Behavior Therapy

Behavior therapy is used to examine both computer behavior and non-computer behavior.

Computer behavior deals with actual online use, with a primary goal of abstinence from problematic applications, while retaining controlled use of the computer/phone for legitimate purposes.

Managing teen's time online and offline is an initial goal of CBT-IA.



Behavior Therapy

Abstinence and willpower are not enough to deal with tech habits.

Half of us make New Year's Resolutions.....

The key to overcoming problematic behaviors/habits is to replace them with something healthier.

Habits, good or bad, consist of 3 elements: a cue, a routine and a reward.



Cognitive Therapy

In the second phase of CBT IA, is cognitive therapy, which addresses the rationalizations that justify excessive online use

These cognitions are identified, challenged, and modified.

These cognitions/thought serve as triggers for the addictive behavior.



Cognitive Therapy

Cognitive therapy is a psychoeducational approach that teaches young people how their brain functions and how incorrect and irrational thoughts influence their feelings and behaviors and how to replace those with rational cognitions.



Positive Psychology

Cognitive therapy involves the use of Positive Psychology

Teens often feel a sense of helplessness and lack of control in their lives and they try to establish control online.

Providing acceptance and positive regard can help to reduce this sense of helplessness and increase confidence.



Reality Therapy

Reality therapy, a therapeutic approach that focuses on problem-solving and making better choices in order to achieve specific goals.

Reality therapy focuses on the here and now rather than the past.

3 Rs: realism, responsibility, and right-and-wrong, rather than symptoms of a disorder.



Harm Reduction

Harm Reduction Therapy (HRT) the third phase of CBT IA focuses on continued recovery and relapse prevention.

HRT addresses any co-existing conditions associated with the development of social media/tech addiction.



Behavioral Design

Working out what need(s) the tech habits is satisfying and design another habit to satisfy that need.

Redesign environments to reduce cues for problematic habits and to maximize rewards for healthier habits.



Behavioral Design Techniques

Practicing the opposite: Disrupt normal routines and re-adapt new time patterns of use in an effort to break online habits.

External stoppers: Use concrete things that teens need to do as prompts to help log off. If they have soccer practice at 4pm, allow tech use from 3-4pm.

Create concrete and doable goals: Don't make unrealistic or ambiguous plans to reduce tech use.



Tools for Parents to Monitor and Control Tech Use



Google Family Link for parents
Google LLC Tools
Everyone

***** 36





Set up home broadband parental controls

Set safe search controls on kid's search engines

Install controls on all devices kids uses

Activate the privacy and safety measures offered by different sites; social networking sites like Facebook have privacy settings that will help prevent your child seeing unsuitable advertising.

Block pop-ups of inappropriate content.



Google Family Link for parents

Google LLC Tools

Everyone

★★★★★ 361,821

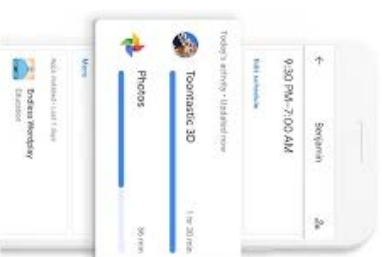
Add to Wishlist

Install

Supervise your child's Google Account



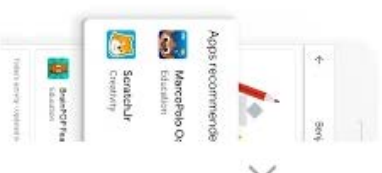
Guide them to good content



Manage the apps they can use



See the recommendations



Try the free Family Link parental controls app from Google. Whether your children are younger or in their teens, the Family Link app lets you set digital ground rules remotely from your own device to help guide them as they learn, play, and explore online. For children under 13 (or the applicable age of consent in your country), Family Link also lets you create a Google Account for your child that's like your account, with access to most Google services.



Resources for Parents & Professionals

Common Sense Media <https://www.common sense media.org/>

Parent Info <https://parentinfo.org/>

Kids Health <https://kidshealth.org/en/parents/net-safety.html>

Parenting <https://www.parenting.com/child/keeping-your-child-safe-o>

Net Literacy <https://www.netliteracy.org/safe-connects/>



Resources for Parents & Professionals

Jean Twenge's "The Igen"

Ana Homayoun's "Social Media Wellness"

Adam Alter's "Irresistible"

Robert Lustig's "Hacking the American Brain"

Brooks & Lasser's "Tech Generation"

Jonathan McKee's "The Teen's Guide to Social Media... and Mobile Devices"

Diana Graber's "Raising Humans in a Digital World: Helping Kids Build a Healthy Relationship with Technology"



Resources for Parents & Professionals

Frances Jensen's "The Teenage Brain"

Chapman & Confrey's "The Adolescent Brain"



Contact

Dr. Paul J Marcille

Licensed Psychologist

dr.paulmarcille@gmail.com

Tel. (408) 438-8300

www.drmarcille.com