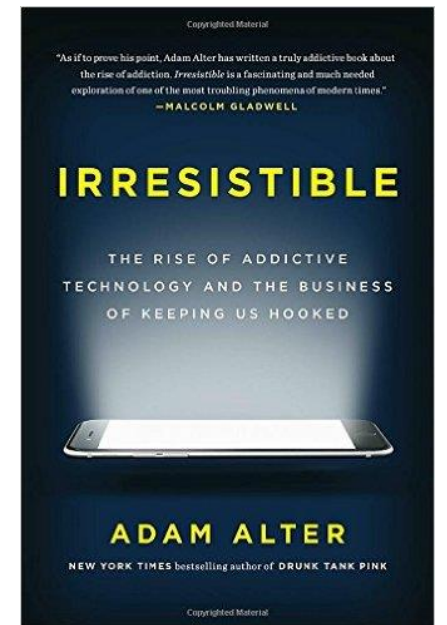# Tech Talks: Tech for Seniors
Addiction by Adam Alter

Center for Learning in Retirement - Fall 2017

Glen Maxson

seniortechadvisor.com

Irresistible:
The Rise of Addictive Technology and the Business of Keeping Us Hooked

Review of a book by Adam Alter

Introduction

Adam Alter is an Associate Professor of Marketing at New York University's Stern School of Business, with an affiliated appointment in the New York University Psychology Department.

Adam is the *New York Times* bestselling author of two books: *Irresistible* (March, 2017), which considers why so many people today are addicted to so many behaviors, from incessant smart phone and internet use to video game playing and online shopping.

2017 TED Talk

Why our screens make us less happy
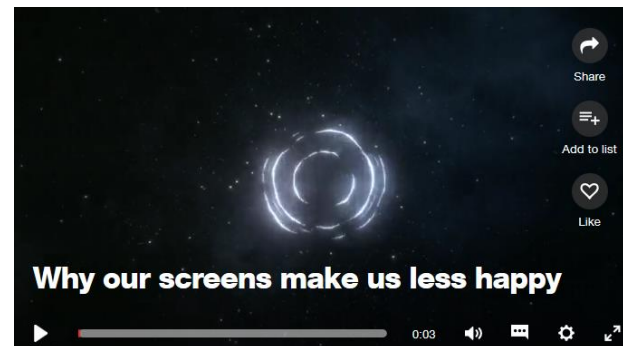
What are our screens and devices doing to us? Psychologist Adam Alter studies how much time screens steal from us and how they're getting away with it. He shares why all those hours you spend staring at your smartphone, tablet or computer might be making you miserable -- and what you can do about it.

NPR Interview (Mar. 13, 2017)

'Irresistible' By Design: It's No Accident You Can't Stop Looking At The Screen (30:20)

Adam's definition of "addiction"?

It is something you enjoy doing in the short term, that undermines your well-being in the long term — but that you do compulsively anyway.

Play introduction

Modern definitions recognize that addiction is ultimately a bad thing. A behavior is addictive only if the rewards it brings now are eventually outweighed by damaging consequences. Breathing and looking at wooden blocks aren't addictive because, even if they're very hard to resist, they aren't harmful. Addiction is a deep attachment to an experience that is harmful and difficult to do without. Behavioral addictions don't involve eating, drinking, injecting, or smoking substances. They arise when a person can't resist a behavior, which, despite addressing a deep psychological need in the short-term, produces significant harm in the long-term.

The Addicted Brain (Sept. 17 National Geography)

p. 41 – In the Grip of Gaming

In Seoul, e-stadiums and game parlors charge about a dollar an hour, and some venues are open around the clock. Soon after South Korea made super-high-speed Internet cheap and widely available, it became clear that some people were ruining their lives through obsessive game playing. The government now pays for treatment. The American Psychiatric Association hasn't recognized compulsive gaming as an addiction, but it lists Internet game disorder as 'requiring more study'.

E-Stadiums

Hijacking the Brain
(Natl. Geo. p.42)
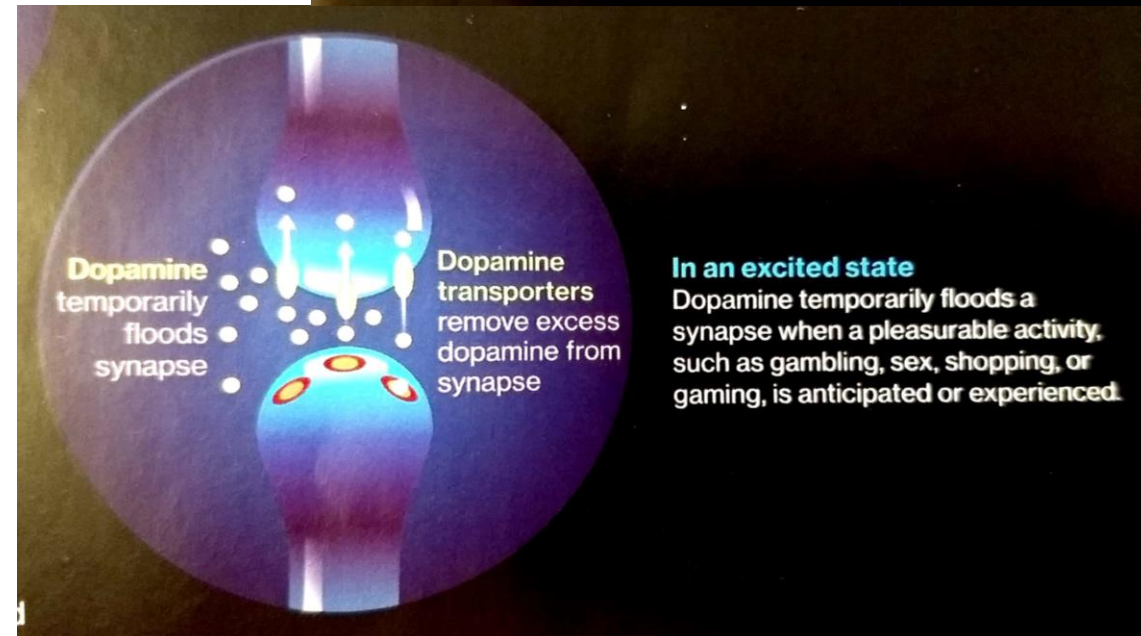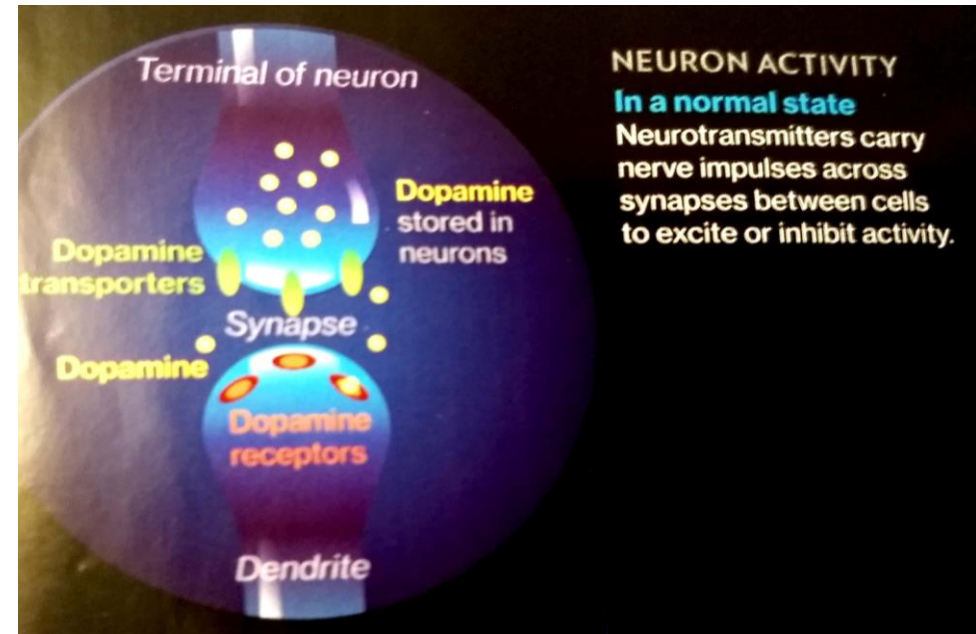

PATHWAYS TO CRAVING
Desire is triggered when dopamine, which originates near the top of the brain stem, travels through neural pathways to act on the brain. Drugs increase the flow of dopamine.

Ventral tegmental area (VTA)
Dopamine is produced here and flows outward along neurons distributed throughout the brain's reward system.

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

Prefrontal 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.

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

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.

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

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

PLEASURE HOT SPOTS
A system of small hedonic hot spots, unrelated to dopamine, provides temporary sensations of pleasure and forms a feedback loop with the reward system that controls desire.

DOPAMINE

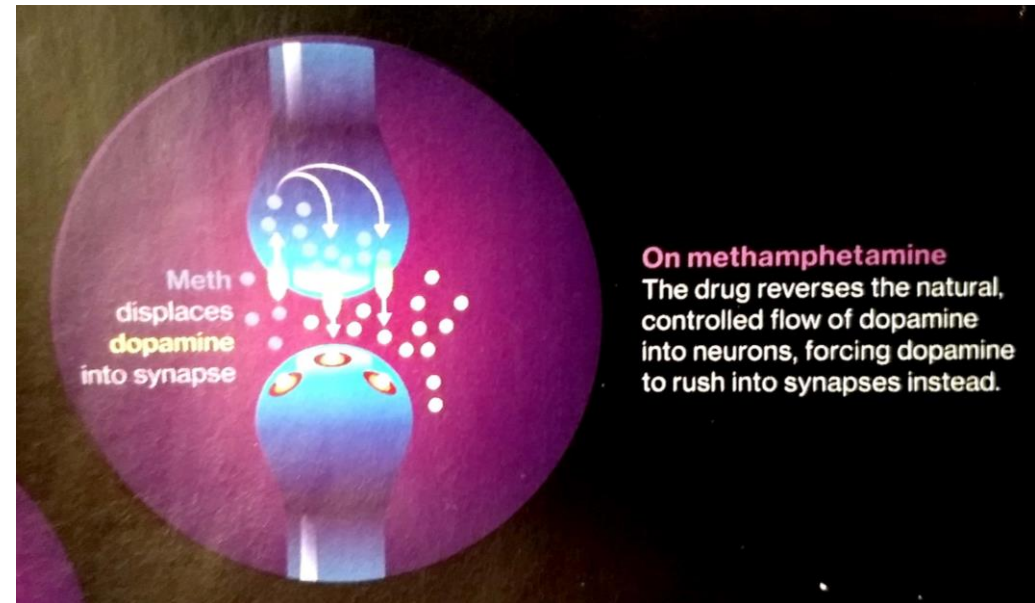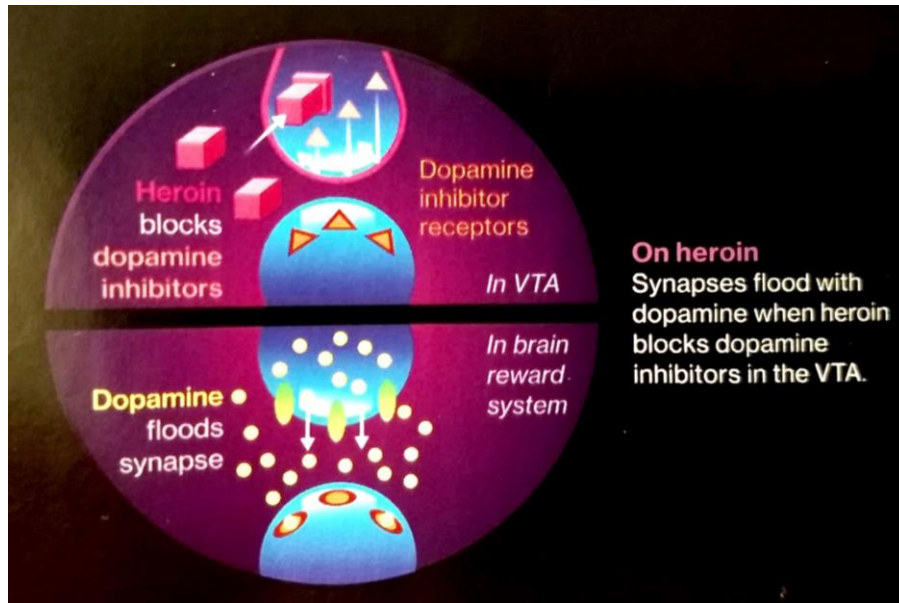# Hijacking the Brain (continued)
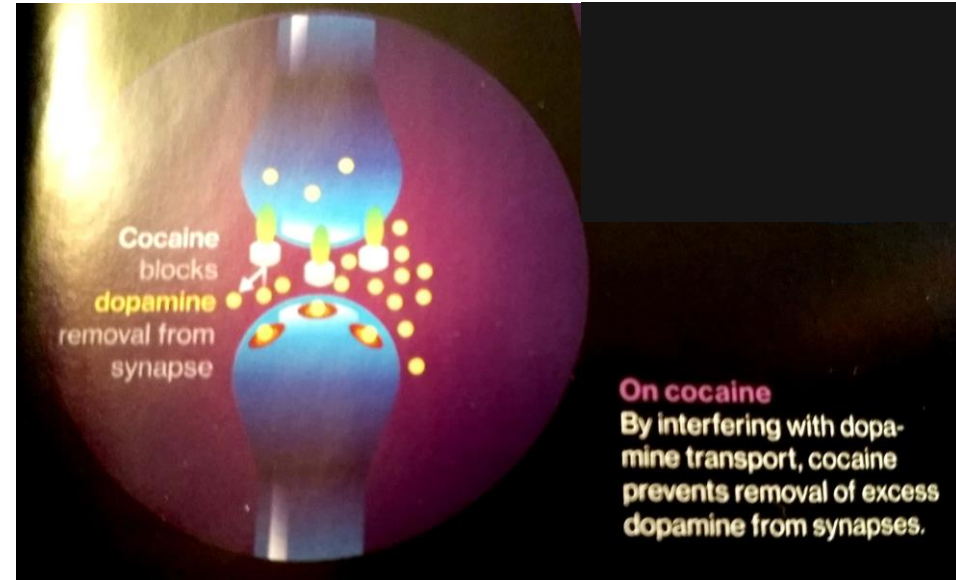

A NATURAL HIGH
Our brains evolved a dopamine-based reward system to encourage behaviors that help us survive, such as eating, procreating, and interacting socially.

Terminal of neuron

Dopamine stored in neurons

Dopamine transporters

Synapse

Dopamine

Dopamine receptors

Dendrite

NEURON ACTIVITY
In a normal state
Neurotransmitters carry nerve impulses across synapses between cells to excite or inhibit activity.

Dopamine temporarily floods synapse

Dopamine transporters remove excess dopamine from synapse

In an excited state
Dopamine temporarily floods a synapse when a pleasurable activity, such as gambling, sex, shopping, or gaming, is anticipated or experienced.

Hijacking the Brain (continued)

A CHEMICAL RUSH
Different drugs interact with the reward system in unique ways to keep synapses artificially flooded with dopamine. That dopamine rush can rewire your brain to want more drugs, leading to addiction.
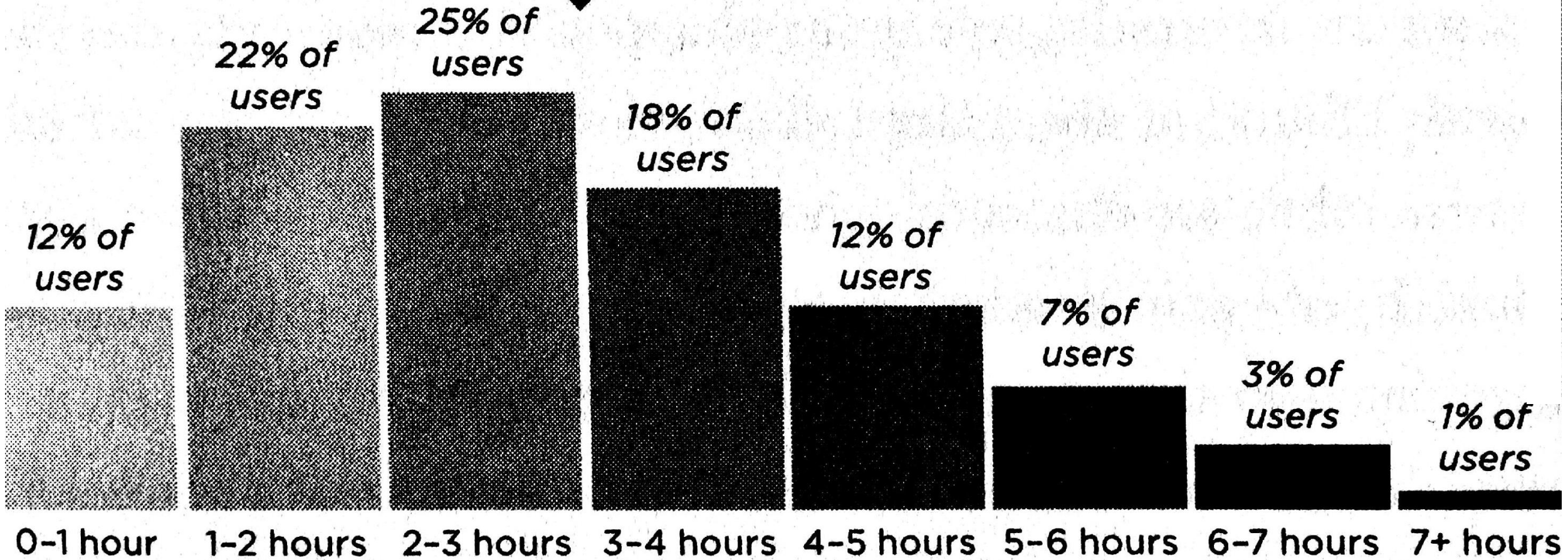
Cocaine blocks dopamine removal from synapse

On cocaine
By interfering with dopamine transport, cocaine prevents removal of excess dopamine from synapses.

Heroin blocks dopamine inhibitors

Dopamine inhibitor receptors

In VTA

Dopamine floods synapse

In brain reward system

On heroin
Synapses flood with dopamine when heroin blocks dopamine inhibitors in the VTA.

Meth displaces dopamine into synapse

On methamphetamine
The drug reverses the natural, controlled flow of dopamine into neurons, forcing dopamine to rush into synapses instead.

Common 'behavioral addictions':

- Exercise
- Video games
- Gambling
- Work
- E-mail (p 109)
- Social media
- Binge watching
- Hoarding
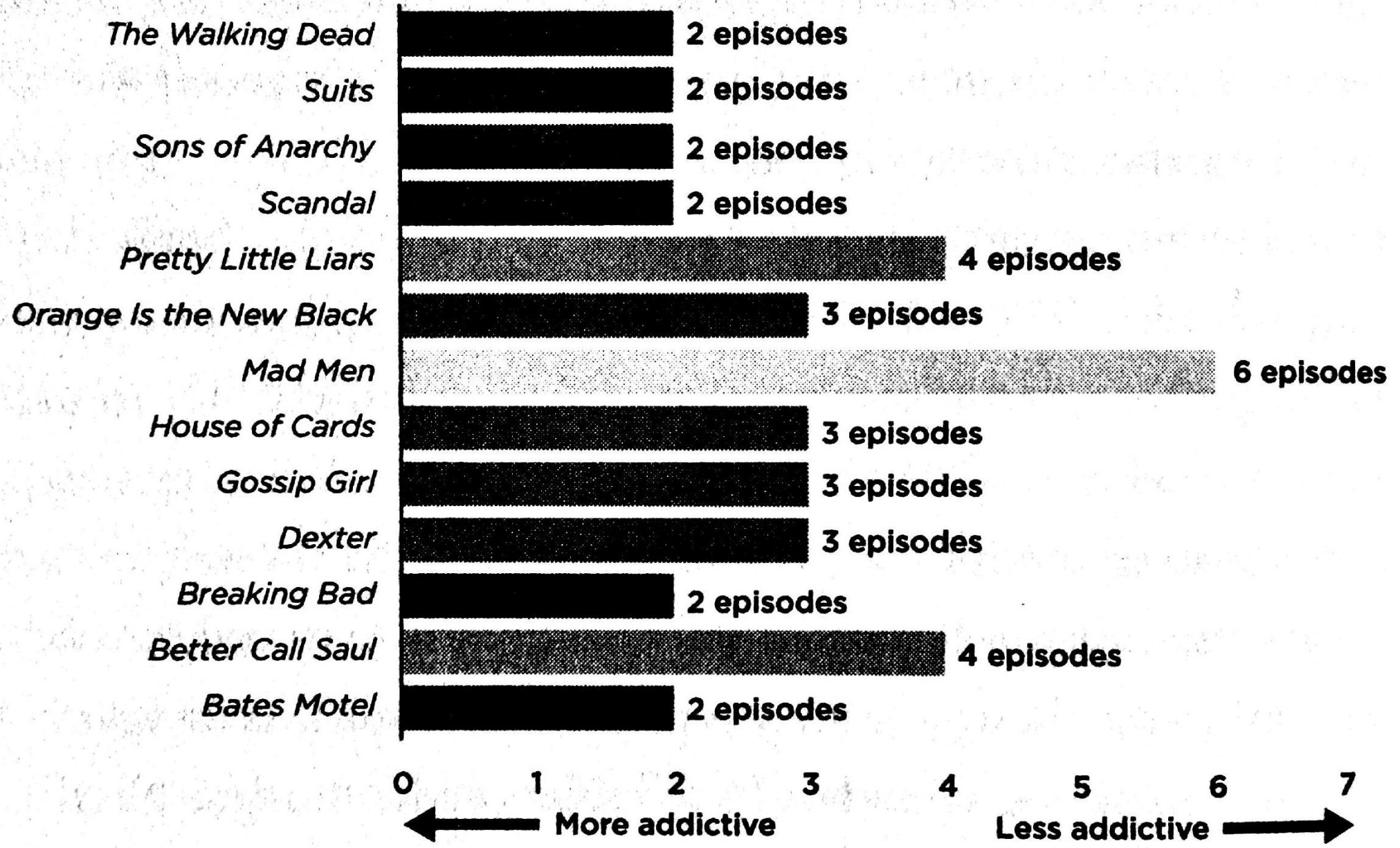- …

What do these have in common?

- Behavioral addiction is rooted in environment + circumstance
- Might fulfill a psychological need, obsession, compulsion
- May be detrimental to work, health, hygiene, social interaction…
- Often becomes something we 'want' versus something we 'like'

Overall average: 3 hours

12% of users — 0-1 hour
22% of users — 1-2 hours
25% of users — 2-3 hours
18% of users — 3-4 hours
12% of users — 4-5 hours
7% of users — 5-6 hours
3% of users — 6-7 hours
1% of users — 7+ hours

Average daily smartphone screentime

Number of episodes before 70 percent of viewers are hooked

Show	Episodes
The Walking Dead	2 episodes
Suits	2 episodes
Sons of Anarchy	2 episodes
Scandal	2 episodes
Pretty Little Liars	4 episodes
Orange Is the New Black	3 episodes
Mad Men	6 episodes
House of Cards	3 episodes
Gossip Girl	3 episodes
Dexter	3 episodes
Breaking Bad	2 episodes
Better Call Saul	4 episodes
Bates Motel	2 episodes

0 1 2 3 4 5 6 7

← **More addictive**   **Less addictive** →

How long do you think the average office email goes unread? I guessed ten minutes. The truth is just six seconds. In reality, 70 percent of office emails are read within six seconds of arriving. Six seconds is less time than it's taken you to read this paragraph so far, but it's long enough for the average worker to disrupt whatever he's doing to open his email program and click on the incoming email. This is hugely disruptive: by one estimate, it takes up to twenty-five minutes to become re-immersed in an interrupted task. If you open just twenty-five emails a day,

What makes tech so 'irresistible'?

By design,

- Goal setting, perfectionism – time and numbers (e.g. FitBit)
- Classic reinforcement – provide small doses of positive feedback (work)
- Uncertainty - Facebook, Instagram… (social media)
- 'Loss as motivation' – the gambler's paradox (slots)
- Mobile access – iPad and iPhone enabled (mobile devices)
- Ludic loops – complete one challenging element, then the next… (video games)
- 'Flow' - proximal (skill) development – skill vs. challenge (video games)
- Zeigarnik effect – incomplete experiences (e.g. cliff-hangers) (TV shows)
- MUDs & MMOs - immersion, achievement, social (connection) (video games)
- Absence of Stopping rules (all)

Bottomline: Every technique in the book is used to get and keep us hooked!

Play World of Warcraft segment starting at 6:03 minutes

Flow (Mihály Csíkszentmihályi)
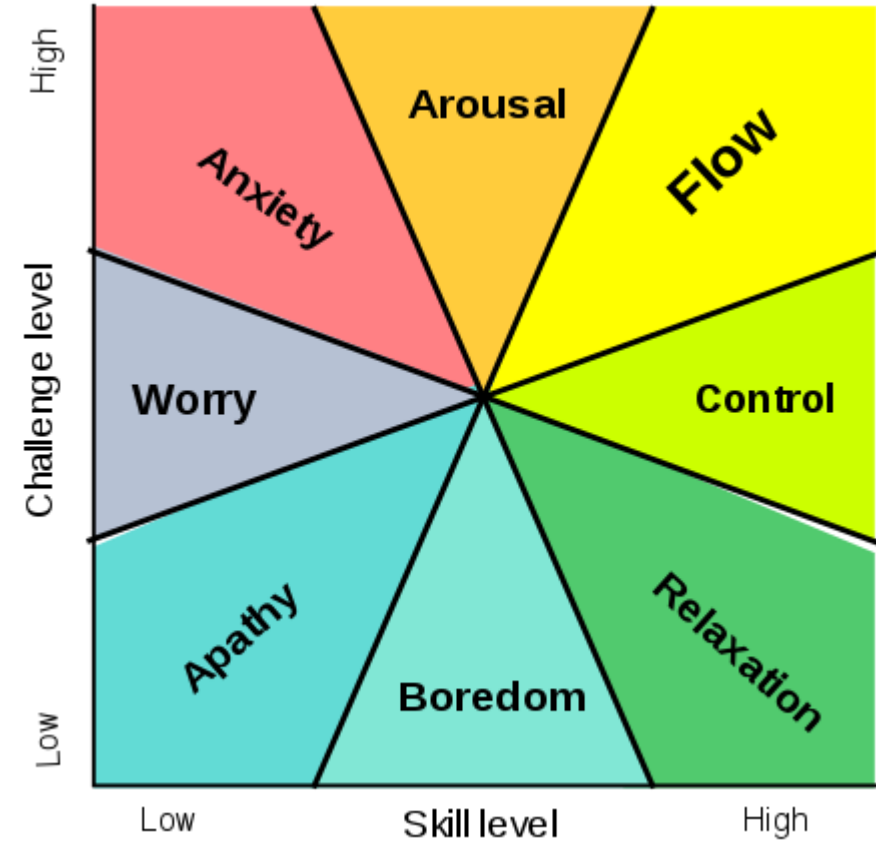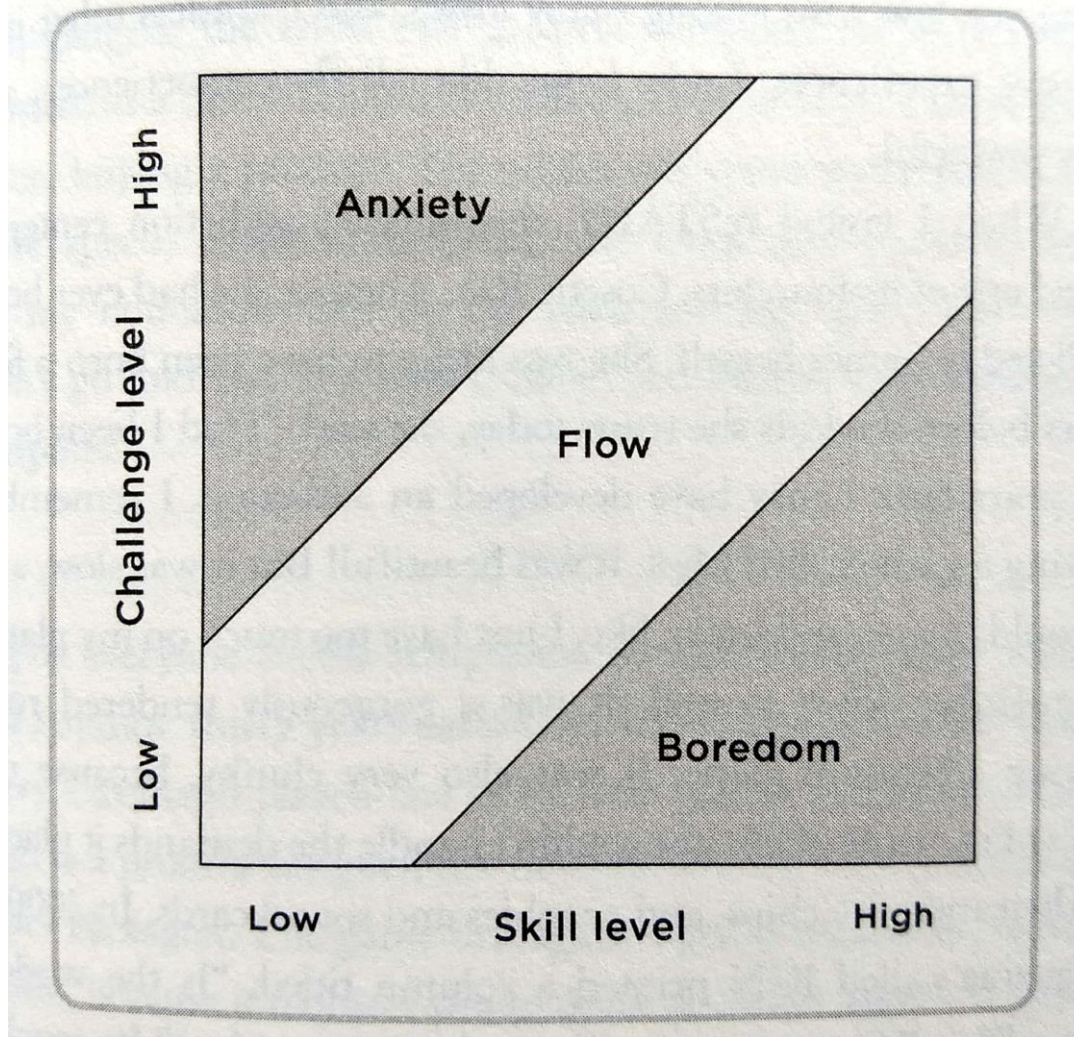
How can we resist irresistible tech?

- Assume 'abstinence + will power' are <u>not</u> enough
    - Take the test
- Better is 'suppression + distraction' – need to replace one behavior with something else
- Habits include cue, routine, and reward – change the routine but not the cue or reward
    - Establish 'healthier' habits – nail-biting example
- Replace "I can't" with "I don't" to hasten habit formation
- Establish 'behavioral architecture'
    - Time for work and tech, time for vacation and social interaction
    - Make 'environmental' changes – create distance between you and temptation
    - Design a world that coaxes, cajoles, and compels your future self to do the right thing
        - SNUZNLUZ - https://www.wired.com/2008/01/snznlz-alarm-cl/
        - Pavlok - https://buy.pavlok.com/products/pavlok-1
- Establish 'stopping rules' that work
- Seek 'Digital Tech Sustainability'

Play ReSTART segment starting at 8:28 minutes
And attention span at 11:00 – 13:45 minutes

- Breem's FreeRice https://lancewiggs.com/2007/11/12/free-rice-addictive-but-is-it-a-scam/

- Fitocracy - https://www.fitocracy.com/

- Welltok - https://welltok.com/ (video – 30 seconds)

- Q2L - Quest to Learn - Game-based learning - http://www.q2l.org/about/ (video – 30 seconds)

- LiveOps - http://www.liveops.com/

- Virtual Heros - http://www.virtualheroes.com/ (http://virtualheroes.biz/missionbiotech/)

- Snowworld - https://www.hitl.washington.edu/projects/vrpain/

- NeuroRacer - https://neuroscape.ucsf.edu/technology/#neuroracer

- Cow Clicker - https://cowclicker.com/

- Gilt – https://www.gilt.com/

- Moment - https://itunes.apple.com/us/app/moment-screen-time-tracker/id771541926?mt=8

- WasteNoTime - http://www.bumblebeesystems.com/wastenotime/

SNŪZNLŪZ - WIFI DONATION ALARM CLOCK

If you don't wake up on time, you'll pay the price.

🔵 Read more...

$39.99 ✓ Presumably

Quantity: 1

BUY NOW or add to wish list

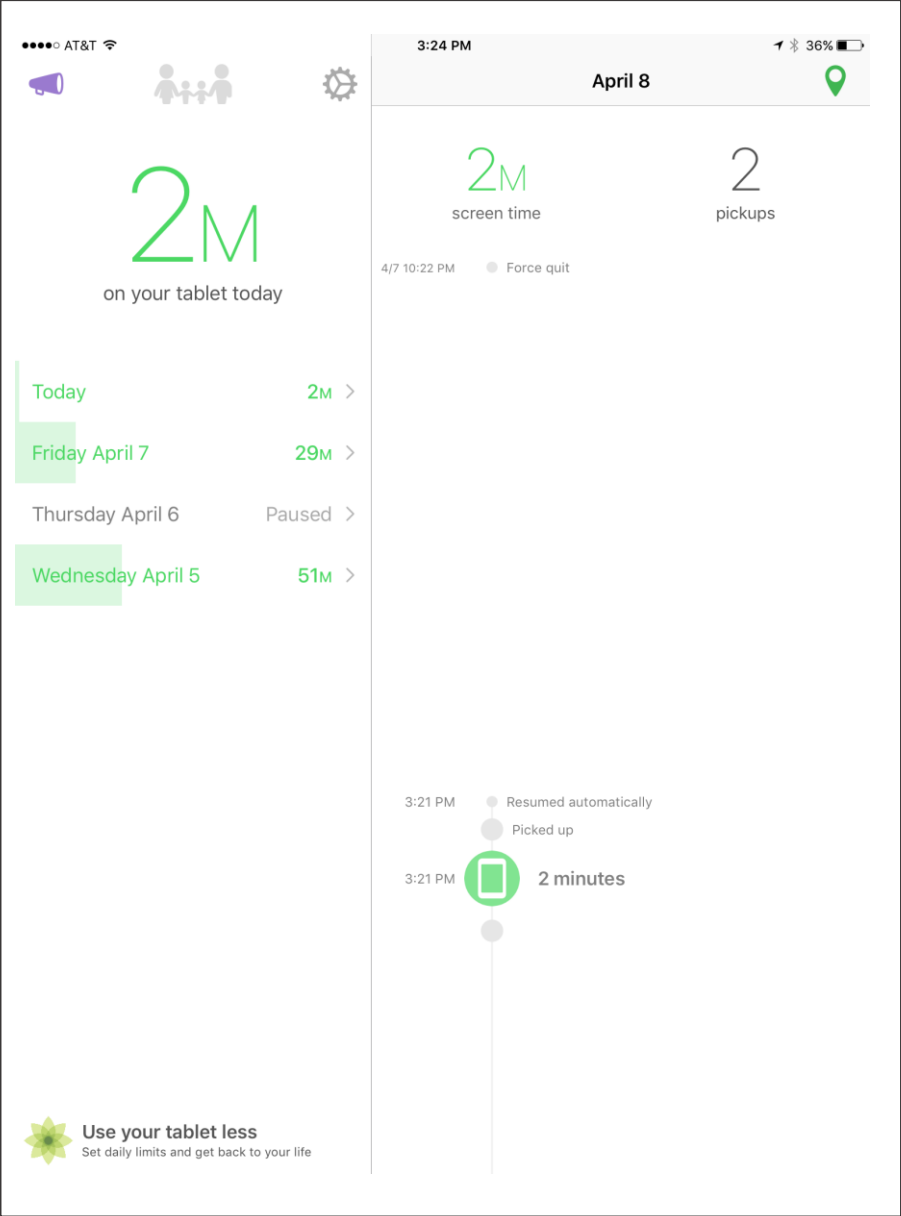# ORDER A PAVLOK + WRISTBAND

$ 179.99 ~~$ 199.99~~

The Pavlok is an award winning wearable device that releases a mild electric stimulus to help you reduce cravings, break bad habits and increase your productivity.

Quantity 1

Moment on an iPad Mini

●●●●○ AT&T 📶

2M
on your tablet today

Today	2M >
Friday April 7	29M >
Thursday April 6	Paused >
Wednesday April 5	51M >

Use your tablet less
Set daily limits and get back to your life

3:24 PM   📍 * 36% 🔋

◀ April 8 📍

2M   2
screen time   pickups

4/7 10:22 PM   ○ Force quit

3:21 PM   ○ Resumed automatically
          ○ Picked up
3:21 PM   🟩 2 minutes
          ○

WasteNoTime

Description   Screenshots   Download   ChangeLog   FAQ   Feedback

WasteNoTime is a browser extension which is designed to help you manage your time spent on the Internet more efficiently. As seen on CNet, PCWorld, Forbes, and Wired!

Time Tracker feature gives you reports on what web sites you spent most of your time. **Instant Lockdown** feature allows you to focus on your work for a period of time with limited Internet access. **Time Quota** feature automatically block selected web sites when you have spent a preset amount of time on them each day.

WasteNoTime extension is now available both on Safari and on Chrome. You may share settings across multiple browsers or multiple computers.

WasteNoTime Time Tracker

This project is inspired by James N. Anderson's LeechBlock Firefox extension.

A Simple Free Productivity Tool

Home   Installation   Examples   FAQ   Support   Version History

LeechBlock

LeechBlock is a simple productivity tool: an extension for the Firefox web browser designed to block those time-wasting sites that can suck the life out of your working day. (You know: the ones that rhyme with 'Blue Cube', 'Space Hook', 'Sticky Media', 'Quitter', and the like.) All you need to do is specify which sites to block and when to block them.

You can specify up to six sets of sites to block, with different times and days for each set. You can block sites within fixed time periods (e.g., between 9am and 5pm), after a time limit (e.g., 10 minutes in every hour), or with a combination of time periods and time limit (e.g., 10 minutes in every hour between 9am and 5pm). With the lockdown feature, you can block sites immediately for a specified duration. You can also set a password or random access code for LeechBlock's options, just to slow you down in moments of weakness!

The sites to block can be specified using wildcards (e.g., `*.somesite.com`) and exceptions (e.g., `+allowme.somesite.com`).

LeechBlock also keeps track of the total amount of time you have spent browsing the sites in each block set.

LeechBlock was inspired by Gina Trapani's Invisibility Cloak user script for the Greasemonkey extension.

Internet Addiction Test (IAT)

The Internet Addiction Test (IAT) is the first validated measure of Internet Addiction that measures Internet use in terms of mild, moderate, to several levels of addiction.

Based on the following five-point scale, select the response that best represents the frequency of a behavior described in the following 20-item questionnaire.

0 = Not Applicable
1 = Rarely
2 = Occasionally
3 = Frequently
4 = Often
5 = Always

Questions 1 - 10

1. ___How often do you find that you stay online longer than you intended?

2. ___How often do you neglect household chores to spend more time online?

3. ___How often do you prefer the excitement of the Internet to intimacy with your partner?

4. ___How often do you form new relationships with fellow online users?

5. ___How often do others in your life complain to you about the amount of time you spend online?

6. ___How often do your grades or school work suffer because of the amount of time you spend online?

7. ___How often do you check your e-mail before something else that you need to do?

8. ___How often does your job performance or productivity suffer because of the Internet?

9. ___How often do you become defensive or secretive when anyone asks you what you do online?

10. ___How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?

Questions 11 - 20

11. ___How often do you find yourself anticipating when you will go online again?

12. ___How often do you fear that life without the Internet would be boring, empty, and joyless?

13. ___How often do you snap, yell, or act annoyed if someone bothers you while you are online?

14. ___How often do you lose sleep due to late-night log-ins?

15. ___How often do you feel preoccupied with the Internet when off-line, or fantasize about being online?

16. ___How often do you find yourself saying "just a few more minutes" when online?

17. ___How often do you try to cut down the amount of time you spend online and fail?

18. ___How often do you try to hide how long you've been online?

19. ___How often do you choose to spend more time online over going out with others?

20. ___How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you're back online?

Your score and what it means

After all the questions have been answered, add the numbers for each response to obtain a final score. The higher the score, the greater the level of addiction and creation of problems resulting from your Internet usage. The severity impairment index follows:

NONE 0 – 30 points

MILD 31- 49 points: You are an average online user. You may surf the Web a bit too long at times, but you have control over your usage.

MODERATE 50 -79 points: You are experiencing occasional or frequent problems because of the Internet. You should consider their full impact on your life.

SEVERE 80 – 100 points: Your Internet usage is causing significant problems in your life. You should evaluate the impact of the Internet on your life and address the problems directly caused by your Internet usage.