

# THE BEHAVIORAL ADDICTIONS

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The ASAM Board Exam Study Course of Addiction  
Medicine

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## Financial Disclosures

Erin Zerbo, MD  
No Disclosures



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## Outline

1. History
2. Impulsivity/Compulsivity Spectrum
3. Gambling Disorder
4. Internet Gaming Disorder
5. Hypersexual Disorder
6. Other Behavioral Addictions



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## History

- Classified as:
  - Obsessive-compulsive spectrum disorders
  - Impulse-control disorders
  - By-products of mood disorders
  - Now: substance use disorder



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## DSM-5

- Substance-related and Addictive Disorders
  - Gambling disorder
- Conditions for Further Study
  - Internet gambling disorder
- Not included at all ("insufficient evidence")
  - Other internet or technology-related behaviors (social media, TV, ect.)
  - Sex, exercise, shopping, food, ect.



Potenza, M: Non-substance addictive behaviors in the context of DSM-5. *Addict Behav* 2014.

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## Essential Features

Failure to resist an

- impulse
- drive
- temptation

to perform an act that is harmful to oneself or others.



Potenza, M: Non-substance addictive behaviors in the context of DSM-5. *Addict Behav* 2014.

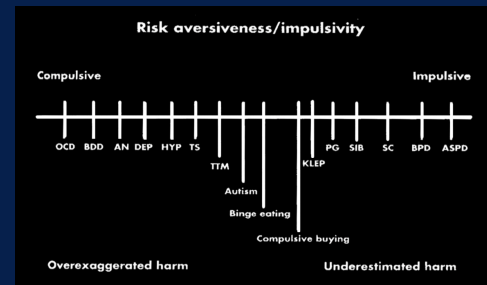
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## Impulsivity vs. Compulsivity

- Both show inability to refrain from repetitive behaviors.
- Impulsivity is driven by an effort to obtain arousal and gratification.
- Compulsivity is driven by an effort to reduce anxiety.

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## Dimensional Approach



Adapted from: Hollander E. Clinical Manual of Impulse-Control Disorders, 2006.

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## Compulsive End

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• OCD</li> <li>• Body Dysmorphic Disorder</li> <li>• Anorexia Nervosa</li> <li>• Depersonalization Disorder</li> <li>• Hypochondriasis</li> <li>• Tourette's Syndrome</li> <li>• Trichotillomania</li> <li>• Autism</li> </ul> | <ul style="list-style-type: none"> <li>• Binge Eating</li> <li>• Compulsive Buying</li> <li>• Kleptomania</li> <li>• Pathological Gambling</li> <li>• Self-Injurious Behaviors</li> <li>• Sexual Compulsions</li> <li>• Borderline Personality Disorder</li> <li>• Antisocial Personality Disorder</li> </ul> |
|---|---|

## Impulsive End

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## Gender Differences

### Men

- Body Dysmorphic
- Sexual Compulsion
- Pyromania
- Gambling
- Internet Addiction

### Women

- Anorexia
- Binge Eating
- Kleptomania
- Compulsive Buying
- Trichotillomania

Liu T. CNS Spectrum, 2007

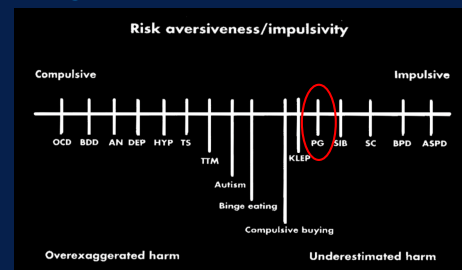
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## Gambling Disorder



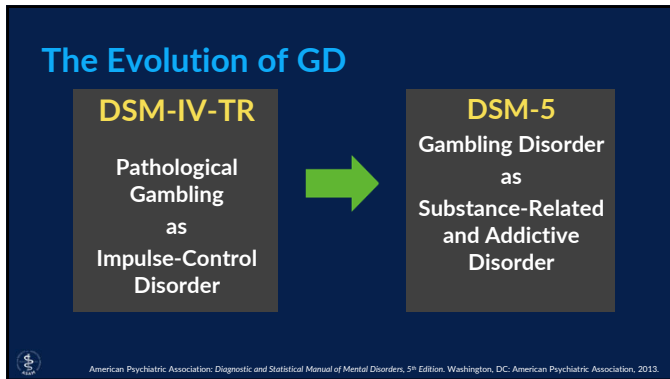
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## Gambling Disorder



Adapted from: Hollander E. Clinical Manual of Impulse-Control Disorders, 2006.

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## Substance-Related and Addictive Disorder

- Alcohol
- Caffeine
- Cannabis
- Hallucinogen
- Inhalant
- Opioid
- Sedative
- Stimulant
- Tobacco
- **Gambling Disorder**

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## Clinical Presentation for GD

### DSM-5 Addiction Criteria, plus

- "Chases" one's losses
- Lies to conceal the extent of her or his gambling
- Relies on others for money
- Gambles when feeling distressed

(Specifiers: episodic or persistent)

### Phases

- Winning Phase
- Loss Phase
- Desperation Phase
- Hopelessness Phase

Blanco C, Cohen O, Luján JJ, et al. Pathological gambling and substance use disorders, in Substance Dependence and Co-Occurring Psychiatric Disorders: Best Practices for Diagnosis and Treatment. Edited by Nunes EV, Seiber J, Levounis P, Davies CA. New York, Civic Research Institute, 2010.

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## Pharmacology of GD

- Gambling affects:
  - DA
  - NE
  - Cortisol
  - 5HT
- Neurobiological similarities with substance use disorders

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## Epidemiology

### US Gambling Statistics:

- \$73 billion/year casino gaming revenue
- 82% of US residents gamble
- 1% - 2% meet criteria for PG

### Problematic Gamblers:

- \$40,000 average individual debt
- 25 hours/week average time spent

www.americangaming.org; Dickson-Gillespie L, Rugle L, Rosenthal R, Fong T: Preventing the incidence and harm of gambling problems. J Prim Prev 29:37-55, 2008.

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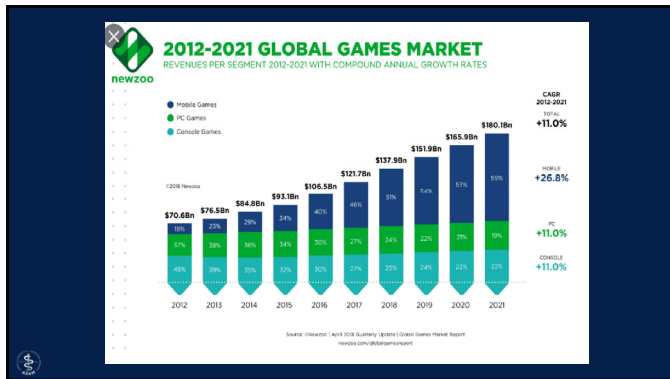
## The decline of casino slots and the rise of online

theleader.info  
By @theleaderinfo - 10/05/2019

The decline of casino slots and the rise of online

For many years the mental image conjured up by the word 'casino' was made up of one of two things. It was either gaming tables surrounded by people rolling dice, holding playing cards or placing bets on a roulette wheel, or it was row upon row of flashing slot machines.

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**State forecasts dip, stagnation of casino tax aid**  
Projections show state will no longer be able to count on more money from slots, table game for schools

By Lauren Stanforth Published 12:32 pm EDT, Wednesday, March 13, 2019

Times Union, March 2019

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**What's Available in Your State?**

- Opportunities in U.S.:
  - Land-based casinos
  - Internet gambling
  - Nonregulated gambling
  - Online fantasy sports
- More available and accessible now than ever before

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**Screening Tools**

- The Lie/Bet Test
  - Have you ever felt the need to bet more and more money?
  - Have you ever had to lie to people important to you about how much you gambled?

99% sensitivity, 91% specificity

Johnson EE, Hamer R, Nora RM, et al. The lie/bet questionnaire for screening pathological gamblers. Psychological Reports 80:83-88, 1997.

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**Gambling Cognitive Distortions**

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**Interpretative Biases**

- Attributing wins to skill, losses to flukes
- Wrongly believing that a series of losses increases the chance of subsequent win
- Near misses ("I was only one number away!")
- The "Sunk-Cost" effect


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## Game #1

- A. A sure gain of \$250
- B. 25% chance to gain \$1,000, 75% chance to gain nothing.




Adapted from: Tversky A, Kahneman D: The framing of decision and the psychology of choice. *Science* 211:4538, 1981.

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## Game #1

- A. A sure gain of \$250 84%
- B. 25% chance to gain \$1,000, 75% chance to gain nothing. 16%




Adapted from: Tversky A, Kahneman D: The framing of decision and the psychology of choice. *Science* 211:4538, 1981.

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## Game #2

- A. A sure loss of \$750
- B. 25% chance to lose nothing, 75% chance to lose \$1,000.




Adapted from: Tversky A, Kahneman D: The framing of decision and the psychology of choice. *Science* 211:4538, 1981.

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## Game #2

- A. A sure loss of \$750 13%
- B. 25% chance to lose nothing, 75% chance to lose \$1,000. 87%



Adapted from: Tversky A, Kahneman D: The framing of decision and the psychology of choice. *Science* 211:4538, 1981.

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## Mathematics

	Game 1		Game 2
25%	+750	25%	+750
25%	-250	25%	-250
25%	-250	25%	-250
25%	-250	25%	-250

Adapted from: Tversky A, Kahneman D: The framing of decision and the psychology of choice. *Science* 211:4538, 1981.

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## Human Nature

- People avoid risks to ensure gains (even small gains).
- People take risks to avoid definite losses (even big risks).

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## Superstitious Beliefs


Believing in:

- Good luck objects (like animal parts)
- Behaviors
- Routines



Gaboury A, Ladouceur R. Erroneous perceptions and gambling. Journal of Social Behaviors and Personality 4:411-420, 1989.

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## Selective Memory

- Remembering wins while ignoring losses.
- Totalling wins without correcting for amounts lost.

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## Telescoping

- **Temporal:**
  - Expecting that naturally occurring—that is, probabilistically expected—wins will happen sooner rather than later.
- **Reference:**
  - Expecting that naturally occurring—that is, probabilistically expected—wins will happen to oneself rather than others.

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## Treatment

- Behavior therapy, cognitive behavioral therapy, family therapy
- Opioid antagonists, SSRIs
- Mutual-help groups (Gamblers Anonymous)



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## Treatment: GD as an Impulsive Disorder

- **Opioid Antagonists**
  - Naltrexone and Nalmefene
- Block opioid receptors, decrease dopamine function, and reduce "reward cravings"
- Best with family history of alcoholism



Grant JE, Kim SW, Hollander E, et al. Predicting treatment response to opiate antagonists and placebo in the treatment of pathological gambling. Psychopharmacology 200:521-527, 2008.  
Grant JE, Potenza MN. Pathological Gambling: A Clinical Guide to Treatment. Washington, DC, American Psychiatric Publishing, 2004.

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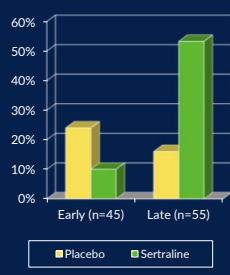
## Treatment: GD as a Compulsive Disorder

- **Selective Serotonin Reuptake Inhibitors**
  - Fluvoxamine, Paroxetine, Escitalopram
- Block serotonin reuptake, increase serotonin function, and reduce "self-medication"
- Best with co-occurring depression or anxiety

Hollander E, Sood E, Pallanti S, et al: Pharmacological treatments of pathological gambling. *Journal of Gambling Studies* 21:101-110, 2005.

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## Sertraline for Alcohol Use Disorder




Group	Placebo	Sertraline
Early (n=45)	~25%	~10%
Late (n=55)	~15%	~55%

- Abstinence rates during a 14-week treatment trial with sertraline 200mg daily
- Helped late-onset drinkers (type 1)
- Worsened early-onset drinkers (type 2)

Pettinati, *Alcohol Clin Exp Res*, 2000.

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## Internet Gaming Disorder



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## The Evolution of GD

**DSM-IV-TR**

Not found

➔

**DSM-5**

Conditions for Further Study

American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*. Washington, DC: American Psychiatric Association, 2013.

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## DSM-5 Criteria

- DSM-5 Addiction Criteria, plus
  - Has deceived family, therapists or others about the amount of gaming
  - Uses games to escape/relieve negative mood  
(Excludes Internet gambling, recreational/social Internet use, sexual websites)

American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*. Washington, DC: American Psychiatric Association, 2013.

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## Clinical Presentation of IGD



- Prevalence: Males 12 - 20 years old, Asian countries (esp. China + South Korea)
- Massively multiplayer online role-playing game (MMORPG) associated with most impairment
  - "Team aspects" are a key motivation
  - 8-10 hours/day, > 30 hours per week

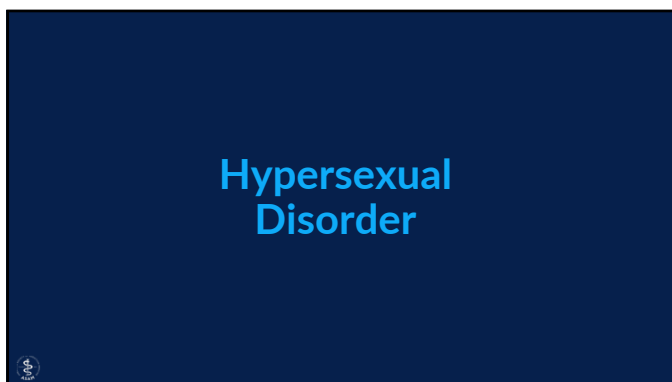
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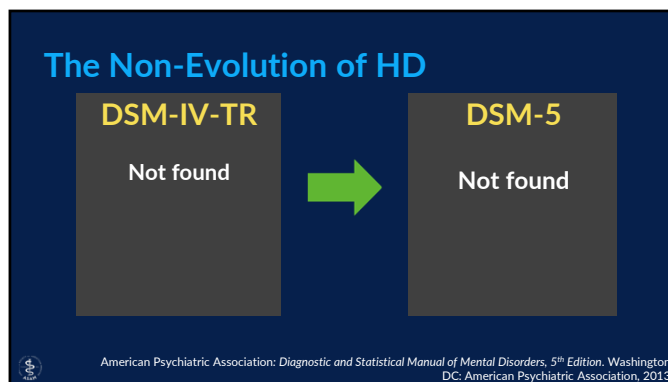
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### Proposed Criteria

- Recurrent sexual fantasies/urges/behaviors with 3 or more:
  - Time spent interferes with other non-sexual obligations
  - Repetitive engaging in response to dysphoric mood states
  - Repetitive engaging in response to stressful life events
  - Repetitive but unsuccessful efforts to control behavior
  - Repetitive engaging while disregarding risk for physical/emotional harm to self or others
- Specify if:
  - Masturbation, pornography, sexual behavior with consenting adults, cybersex, telephone sex, strip clubs

Kafka, MP. Hypersexual disorder: A proposed diagnosis for DSM-V. Arch Sex Behav 2010.

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### Is it real?

- Controversy about the criteria
  - → But agreement there is out-of-control, repetitive and driven sexual behavior (typically with strangers) which leads to distress and dysfunction
- Sexual encounter = pleasurable
- Sexually addictive behavior = serves to manage and control negative affect
- Often poor insight

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## Rapid Fire: Other Behavioral Addictions

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## Internet Addiction

- Think co-occurring psychiatric disorder
- Use Young's Internet Addiction test

Internet Addiction Test (IAT) by Dr. Kimberly Young.  
Internet Addiction Test (IAT) is a reliable and valid measure of addictive use of Internet, developed by Dr. Kimberly Young. It consists of 20 items that measures mild, moderate and severe level of Internet Addiction.

To begin, answer the following questions by using this scale:-

0	Does not apply
1	Rarely
2	Occasionally
3	Frequently
4	Often
5	Always

Question	Scale
1 How often do you find that you stay on-line longer than you intended?	1 2 3 4 5 0
2 How often do you neglect household chores to spend more time on-line?	1 2 3 4 5 0
3 How often do you prefer the excitement of the Internet to intimacy with your partner?	1 2 3 4 5 0
4 How often do you form new relationships with fellow on-line users?	1 2 3 4 5 0
5 How often do others in your life complain to you about the amount of time you spend on-line?	1 2 3 4 5 0
6 How often do your grades or school work suffers because of the amount of time you spend on-line?	1 2 3 4 5 0

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## Food Addiction

- Distinct from binge-eating disorder
- Use the Yale Food Addiction Scale

Yale Food Addiction Scale  
Grewen, Ceballos, Brownell, 2009  
Contact: catherine.grewen@yale.edu

This survey asks about your eating habits in the past year. People sometimes have difficulty controlling their intake of certain foods such as:

- Foods that are sweet, chocolate, doughnuts, cookies, cake, candy, ice cream
- Starches like white bread, rolls, pasta, and rice
- Fatty foods like cheese, hamburgers, french fries, pizza, and French fries
- Salty snacks like chips, pretzels, and crackers

When the following questions ask about "CERTAIN FOODS" please think of ANY food similar to those listed in the food group or ANY OTHER foods you have had a problem with in the past year.

IN THE PAST 12 MONTHS	Never	Rarely	2-3 times/week	4-5 times/week	6-7 times/week	8-9 times/week	10-11 times/week	12-13 times/week	14-15 times/week	16-17 times/week	18-19 times/week	20-21 times/week	22-23 times/week	24-25 times/week	26-27 times/week	28-29 times/week	30-31 times/week
1 I find that when I eat certain foods, I end up eating much more than I planned	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2 I find myself continuing to consume certain foods even though I am no longer hungry	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3 I eat to the point where I feel physically ill	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4 I eat certain types of food or eating drives on certain types of food is something I worry about	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
5 I spend a lot of time thinking, worrying or obsessing about eating	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6 I find myself constantly eating certain foods throughout the day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
7 I find that when certain foods are not available, I will go great lengths to obtain them. For example, I will drive to the store to get them, even though I have other things to do	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
8 I find that when I eat certain foods, I feel a sense of euphoria or well-being that I cannot get from other foods	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
9 There have been times when I consumed certain foods in order to deal with negative feelings or to escape from problems	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10 There have been times when I ate certain foods in order to deal with negative feelings or to escape from problems	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
11 There have been times when I ate certain foods in order to deal with negative feelings or to escape from problems	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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## Exercise Addiction

- Apply modified DSM-5 criteria for SUD to diagnose

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## Love Addiction

- Look for conflicted attachments or traumatic experiences in childhood



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## Shopping Addiction (Compulsive Buying Disorder)

- More common among women in developed countries
- 2 - 8% prevalence in the U.S.

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## Tanning Addiction

- Naltrexone was shown to induce w/d in a small sample of frequent tanners



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## Work Addiction

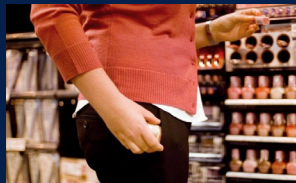
- Your boss says it doesn't exist



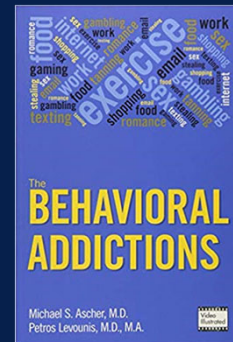
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## Kleptomania

- Possibly an addictive disorder?
- High suicide attempt rate – up to 24%



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## Summary

- Behavioral addictions fall within an impulsivity-compulsivity spectrum of illness.
- DSM-5 only recognizes one disorder officially.
- Psychosocial treatments work.
- Medications have fallen short so far.



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Thank you

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Which of the following behavioral addictions is included in the DSM-5 under "Substance-Related and Addictive Disorders"?

- A. Internet Use Disorder
- B. Gambling Disorder
- C. Internet Gaming Disorder
- D. Hypersexual Disorder



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Research shows that gambling disorder involves the strongest effect on which of the following neurotransmitters?

- A. DA
- B. GABA
- C. Ach
- D. Endorphins



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Which of the following medications has some evidence for the treatment of gambling disorder?

- A. Memantine
- B. Naltrexone
- C. Aripiprazole
- D. Clonidine



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