



# Overview of Gambling Disorders (GD) & Other Related Disorders

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## Speaker Information

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- Dr. Antoine Douaihy is a Professor of Psychiatry and Medicine at the University of Pittsburgh School of Medicine. He has focused his career on patient care, education, advocacy, and research in the field of addiction, psychology of behavior change, and HIV. He has a substantial experience in training and disseminating evidence-based treatments for substance use disorders and addictions to practitioners across disciplines in medical and psychiatric settings on local and national levels. He has a well-established record in conducting multisite clinical trials and serve as the PI, Co-PI and Co-I on many NIAAA; NIMH; HRSA; SAMHSA; NIDA and industry sponsored grants.

# Disclosures

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# Objectives

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At the conclusion of the presentation, participants should be able to:

- Define and better understand gambling behaviors and gambling disorder (GD) and learn about the epidemiology of GD
- Learn about the etiology and risk factors related to GD
- Discuss the neurobiological changes implicated in the pathophysiology of this disorder
- Identify psychiatric comorbidities with GD
- Screen for gambling problem and diagnose GD based on DSM-5 criteria
- Discuss the pharmacological and psychosocial interventions for GD



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## What is Gambling?

- Gambling is an activity in which something of value is risked on the outcome of an event when the probability of winning and losing is less than certain
- Gambling disorder (GD) is a term used in the fifth edition of the Diagnostic and Statistical Manual (DSM-5) to define a persistent and recurrent pattern of gambling that is associated with substantial distress or impairment
- The term “pathological gambling” was used in the third and fourth edition of the DSM and the 10<sup>th</sup> edition of the International Classification of Diseases (ICD-10)

# Gambling as Recreation



- Gambling in many different forms has long been a part of the history of the world
- 48 states\* have some form of legalized recreational gambling in the form of
  - Bingo
  - Lottery
  - Racetrack
  - Slots
  - Poker
  - Table games
  - Sports betting

## Expansion

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- Online Gambling is widespread, yet unregulated, technically restricted and under contention in the US
  - Regulations change rapidly
  - Nevada, New Jersey, Delaware and recently Pennsylvania have passed legislation to allow online gambling, while in-state



# Of the 23 states with casinos The top three states for gambling revenue are:

- Nevada 10.860 billion
- Pennsylvania 3.158 billion
- New Jersey 3.051 billion

# Gambling Ambivalence and Distortion



- Mathematical odds of getting dealt a Royal Flush 1/649,740
- Mathematical odds of becoming president of the United States: 1/10,000,000
- Mathematical odds of winning \$1,000 in McDonald's Monopoly 1/36,950,005
- Your chances of being murdered
  - 1 in 18,000
- Your chances of winning Mega Millions Lottery
  - 1 in 135,145,920



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## Recreation is not without Risk

- 85% of U.S. adults have gambled at least once in their lifetimes (60%-80% in any given year)
- 3-5% have a gambling disorder
- It is believed that most people can gamble without negative consequences, but with the onset of online gambling more people are exposed than before and risk is unknown

# Characteristics of Low Risk Gambling

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- Low risk gamblers know that over time nearly everyone loses
  - The benefit is in the social and entertainment activity not an expectation of financial gain
- Low risk gambling has limits on frequency and duration
- Low risk gambling has predetermined, acceptable limits for losses as in the acceptable and affordable cost of an entertainment activity

# What are the odds of becoming a problem gambler?



- “Pathological gambling” is hypothesized to be caused by a complex interplay involving the following risk factors
  - neurobiological
  - genetic
  - psychological
  - social
- There is evidence of associations between “pathological gambling” and a variety of neurotransmitters (e.g., norepinephrine, serotonin, glutamate, dopamine and endorphins)

# Risk Factors for Gambling Problems

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- Accessibility/Awareness\*
- Early exposure
- Lack of community awareness of dangers
- Social acceptance
- Family history of addiction and/or illegal activity
- Competitive home environment
- Family history of gambling activity and attitudes
- Poor impulse control

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\*There is much discussion as to the extent of accessibility leading to risk and there are theories related to exposure and adaptation



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## Vulnerable Populations-Risk factors

- 2.8-8% of adolescents and college students exhibit problem and “pathological gambling”
  - Student athletes particularly vulnerable
- Affects all races – differences are found in the types of games played, beliefs about money, finances, and self worth
- Disproportionate number of people who smoke, with substance use disorder, psychiatric disorders are “problem gamblers”
- Men more than women
- Low income/socioeconomic status
- High school education or less

## Vulnerable Populations

- Adolescents
  - 5-6% meet criteria
- Elderly
  - Increase in gambling in retirement and harder to recoup financial losses
- Military – All branches run overseas slots for recreation and to make money for social events
- Casino Workers



## Smoking & Gambling



- Heavy smokers often report that they began smoking in adolescence
- People with gambling problems often report that they began gambling in adolescence
- Possible links between smoking and gambling among teenagers

## Early Smoking and Gambling Onset



- Among those who reported smoking regularly, those who reported at-risk or problematic gambling were more likely to have become daily smokers earlier in life
- They also tended to smoke more cigarettes per day
- Those at risk for problems with gambling were more likely to have tried to quit smoking at least once in the past

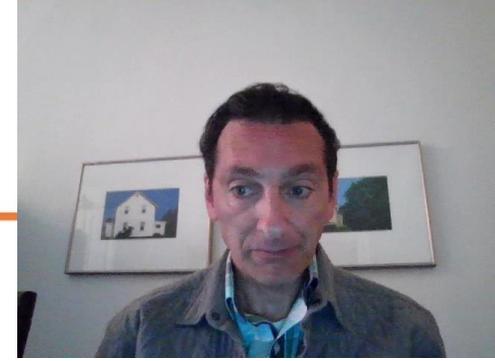


# GENETICS AND NEUROBIOLOGY OF PROBLEM GAMBLING



## Genetics

- Risk is related to both environmental and genetic factors
- The hypothesis of genetic involvement in specific and clinically relevant features of GD
- Heritability estimates of 40% for DSM-IV pathological gambling were derived from the Australian Twin Registry
- Estimates ranging from 50% to 58% reported for problem gambling groups meeting fewer criteria
- More work is needed



## Neurobiology of GD

- Implicated brain regions include the ventral prefrontal cortices (including the medial and lateral orbitofrontal cortices), medial prefrontal cortex and adjacent anterior cingulate cortex, striatum, amygdala, hippocampus and insula
- Dysfunction in these brain regions has been proposed to be associated with disruptions to or differences in several processes and functions, such as sensitivity to reward and excitement, loss-chasing behavior, stress dysregulation and social-emotional problems
- Decreased activity in:
  - Left ventromedial PFC (Decision-making)
  - Orbitofrontal cortex (processing of rewards, dealing with uncertainty, inhibiting responses)
  - Anterior Cingulate (Decision-making)
  - Ventral striatum (NAc, Limbic system)



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## Are Brains of People with GD Different?

- People with GD exhibit lower activity in prefrontal cortex compared to people without GD
- In performing neuro-cognitive tests, people with GD showed similar dysfunctions in prefrontal cortex as people with methamphetamine use disorder



# LINKS BETWEEN GAMBLING PROBLEMS AND OTHER MENTAL HEALTH PROBLEMS



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# Links Between Gambling & Other Psychiatric Conditions



- According to the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), of people diagnosed with “pathological gambling”:
  - 73.2% had an alcohol use disorder
  - 38.1% had a drug use disorder
  - 60.4% had tobacco use disorder
  - 49.6% had a mood disorder
  - 60.8% had a personality disorder
- Other studies suggest between 10-15% of people with and SUD may have a gambling problem



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## Gambling Disorder and Mental Health

Several studies have documented the relationship between GD and specific health issues

- People with GD are at increased risk for
  - Major depression
  - Antisocial personality disorder
  - Phobias

# Pathological Gambling & Substance Use Disorders



- Individuals with mental and/or substance use disorders are 17 times more likely to develop GD
- People with GD are 5.5 more likely to have had a substance use disorder
  - 75% have had an alcohol use disorder
  - 38% have had a drug use disorder
  - 60% have had tobacco use disorder

■ “Recreational Gamblers” smoke at same rate as general

# Suicidality



- Gambling disorder is associated with suicide, suicidal ideation, and suicide attempts
  - Risk factors
    - Financial difficulties
    - Depression
    - Legal problems

## Suicidality



- The National Council on Problem Gambling estimates that:
  - 20% of individuals with problem gambling will attempt suicide
  - About 2 times the rate of suicide attempts compared with other addictions
  - Suicide attempts in those who have gambling and other concurrent disorders is higher



# TYPES OF PROBLEM GAMBLERS

## What are problem gamblers looking for?



With all the negative consequences why continue to gamble?

- **Action Gamblers** – Looking for excitement “rush”
- **Escape Gamblers** – Looking for relief from painful emotions or stress

## Action Gamblers (Strategic)



- Gambles for excitement, & competition
- More likely to engage in “skilled” forms of gaming (sports betting, poker, etc)
- More likely to have early onset of gambling
- Longer progression from regular to out of control (addicted) gambling
- More likely to be male
- More likely to have narcissistic or antisocial traits

## Escape Gamblers (Non-Strategic)

- Gambles for relief, escape from stress or negative affect
- More likely to engage in passive, luck forms of gambling (lottery, slots, bingo)
- Shorter progression from regular gambling to out of control behavior
- More likely to be female
- More likely to have experienced chronic depression





# PROBLEMS SECONDARY TO GAMBLING

# Problem Gambling Progression: ~~When it stops being fun~~



- Winning Phase - gamblers experience a big win or series of wins resulting in unreasonable optimism or belief in their ability to win
- Losing Phase - gamblers begin bragging and thinking about past wins, secretly gambling, and begin to chase their losses
- Desperation Phase - gambling increases in time, frequency, and amount. Remorse, alienation, and problems increase

- Hopeless Phase - Gambler no longer believes there is help or hope

## What's the Harm? The Hidden Vigorish\*



Financial problems, debt, bankruptcy, etc.

- 40% to 60% of cash wagered in casinos is withdrawn from ATMs, either from personal accounts or as cash advances from credit cards (NORC, 1999)

\*Slang term for the charge or interest taken on bets or loans, the advantage is to the house or the loaner; the edge, the take



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## Genetic and Family Factors

- Research consistently shows higher rates of GD in teens whose parents gamble too much
- Children of parents with GD have been shown to have higher levels of the following compared to peers
  - tobacco, alcohol, drug use
  - overeating

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## Intimate Partner Violence



- Case studies of 10 casino communities revealed that most of those communities witnessed increases in domestic violence related to the opening of casinos

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## Co-occurring Psychiatric Disorders



- In treatment-seeking people with GD, 32-76% of patients evidenced other mental health problems, with anxiety, depression, and suicide being most common
- People with GD are 4 times more likely to have major depression than “non-problem gamblers”
- Suicide attempt rates are 17-24% for people with GD



# SCREENING TOOLS FOR GAMBLING DISORDER



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## Beating the System- Hedge Your Bets

- Mental health, substance use, and primary care practitioners can help identify, intervene, and refer/treat people with GD
- Treatment can be incorporated into existing substance use and mental health programs

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## Lie/Bet Questionnaire



- The Lie / Bet Questionnaire is a two-question survey, that has been deemed valid and reliable, to determine if a longer screening tool should be used in diagnostics
  - 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?



## South Oaks Gambling Screen (SOGS)

- 20-item multiple-choice instrument
- Introduced to help identify individuals with pathological gambling
  - 0 = no problem
  - 1–4 = some problem
  - 5 or more = probable “pathological gambler” (GD)
- Has been criticized for high false positive rate



# DIAGNOSIS OF GAMBLING DISORDER

# Similarities between GD and SUDs



- Growing body of scientific literature, in particular on the brain's reward center, has revealed commonalities between pathological gambling and substance use disorders
- Commonalities between GD and SUDs include
  - Loss of control
  - Preoccupation, urges, pathological “wanting”, cravings, associated “highs”
  - Negative impact on major areas of life
  - Major impacts on mood, judgment, and insight
  - Tolerance/withdrawal
  - Hereditary nature
  - Similar treatment success with 12-step program and cognitive behavioral

# Similarities & Differences to Substance use Disorders



## Similarities

- Immediate gratification
- Addictive: preoccupation, inability to stop, tolerance & withdrawal, progressive
- Cravings & urges
- Denial is common
- Accompanying depression / anxiety
- Blackouts / brownouts
- Dissociation
- Mechanism for escape

## Differences

- Gambling more hidden
- Impossible to overdose on gambling
- No ingestion of chemicals
- Labile financial situation
- More unpredictable outcome
- Generally not perceived as a disease
- Fewer resources for gamblers
- Faster progression

• Dysfunctions in the family often present

## Differences from Substance Use Disorders



- No toxicology test to diagnosis it; easier to hide
- Behaviors are not due to drug effects (thus, makes it more open to shame/guilt)
- Directly associated with financial gains and losses – accolades and blame for same behavior
- Greater uncertainty of outcome (i.e., anything can happen)
- Ego-related symptoms: gambling can boost ego or cause discord with self image
- More socially acceptable



## DSM-IV to DSM-5 Changes

DSM-IV	DSM-5
Pathological Gambling	Gambling Disorder
Impulse control disorders not elsewhere classified	Substance-Related and Addictive Disorders
5 or more criteria	4 or more criteria in the past 12 months
Has committed illegal acts to fund gambling	Criterion dropped

## ~~DSM-5 Diagnostic Criteria:~~ Gambling Disorder



A. Persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress, as indicated by the individual exhibiting **four** or more of the following in a 12-month period:

- needs to gamble with increasing amounts of money in order to achieve the desired excitement
- is restless or irritable when attempting to cut down or stop gambling
- has repeated unsuccessful efforts to control, cut back, or stop gambling
- is often preoccupied with gambling (e.g., persistent thoughts of reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)

## ~~DSM-5 Diagnostic Criteria:~~ Gambling Disorder



- often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed)
- after losing money gambling, often returns another day to get even (“chasing” one’s losses)
- lies to conceal the extent of involvement with gambling
- has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
- relies on others to provide money to relieve desperate financial situations caused by gambling

B. The gambling behavior is not better accounted for by a manic episode



## Specifiers

- **Episodic:** Meeting diagnostic criteria at more than one time point, with symptoms subsiding between periods of gambling disorder for at least several months
- **Persistent:** Experiencing continuous symptoms, to meet diagnostic criteria for multiple years
- **In early remission:** After full criteria for gambling disorder were previously met, none of the criteria for gambling disorder have been met for at least 3 months but for less than 12 months
- **In sustained remission:** After full criteria for gambling disorder were previously met, none of the criteria for gambling disorder have been met during a period of 12 months or longer

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## Episodic or Persistent



- Gambling Disorder may also occur at one or more points in an individual's life but be absent during other periods
- Alternately, some individuals experience chronic Gambling Disorder throughout all or most of their lives.



# TREATMENT OF GAMBLING DISORDER



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## Management

- Epidemiological studies have suggested that ~10% of people with GD seek professional treatment or attend mutual support groups like Gamblers Anonymous (GA)
- Motivations for seeking treatment vary and may include financial, relational, legal and other problems
- Information from collateral sources (such as family members and concerned significant others) extremely helpful



## Psychosocial Interventions

### ■ Psychosocial interventions

- Cognitive therapies: Short-term benefits in most studies
- Cognitive behavioral therapy (CBT): Most used treatment approach/long-term effects (9-12 months) with less evidence
- Motivational Interviewing: benefits limited to the short-term/no more effective than CBT

### ■ Gamblers Anonymous (GA):

- GA + Professional Care= more likely to achieve abstinence than those who don't participate in GA
- Large RCT found people with GD (DSM-IV) who attended GA and completed either cognitive therapy or a CBT workbook had better outcomes at 6 and 12 months, compared to those referred to GA alone

# Pharmacotherapy

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- No FDA- approved pharmacotherapy for GD
- Potential benefits of specific medications
  - Opioid-receptor antagonists (naltrexone & nalmefene): Naltrexone showed some promise
  - Monoaminergic drugs
  - Glutamatergic drugs
- Combination of pharmacotherapy and psychotherapy treatments
- Comorbidities and pharmacological treatments: mood stabilizers & SSRIs



# Pharmacotherapy

- Antidepressants, opioid-receptor antagonists and mood stabilizers were associated with an improvement in GD relative to placebo or no treatment with an overall effect size of 0.78
- Opioid-receptor antagonists, such as naltrexone or nalmefene may indirectly influence dopaminergic neurons in the mesolimbic pathway, although their precise mechanism of action in GD is currently speculative
- Monoaminergic drugs: Proposed role of serotonin with respect to impulse control (SSRIs, bupropion, olanzapine)
- Glutamatergic drugs: Possible role for glutamate transmission and receptors in reward, reinforcement and relapse: N-acetylcysteine + CBT + MI elements & imaginal desensitization in 28 individuals with tobacco use disorder



## A Winning Program



- Screen for gambling problems and refer for a full evaluation if indicated
- Use evidenced-based prevention, assessment and treatments and existing mutual support groups such as GA
- Include gambling screen/questions in mental health and substance use assessments
- Include a comprehensive risk assessment (suicide/harm to others)
- Offer multi-model approach to include, legal, financial, and family issues

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# Concerns about Seeking Help

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- Previous experiences
  - unsuccessful help-seeking
  - negative experiences
- Doubts about helping professionals themselves
  - lacking the experience of being a problem gambler
  - lack of knowledge
  - confidentiality / trust / anonymity
  - legitimacy, financial gain
- Expectations about treatment
  - fear of failure



## Threats to Personal Integrity

- Stigma / Pride
  - embarrassment / shame
  - not wanting to be labeled
- Secrecy / Exposure
  - exposing a weakness
  - exposing the problem
- Self-Sufficiency vs. Reliance on Others
- Openness to talking about personal issues





# OTHER NON-SUBSTANCE-RELATED OR BEHAVIORAL “ADDICTIONS”



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# Behavioral Addictions

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- Addiction is a loaded term
- Several conditions have been proposed but have little to no data validating diagnostic criteria
- Diagnostic criteria would include:
  - Excessive time spent in the behavior
  - Repeated attempts to cut down or stop the behavior
  - Diminished control over the behavior
  - Tolerance
  - Withdrawal
  - Continued behavior despite adverse psychosocial consequences

# Internet Gaming Disorder

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- Lack of sufficient research to classify it as a unique disorder at time of writing DSM-5, is listed as a *condition for future research in DSM-5*
- WHO announced in 2017 that gaming disorder would be a new condition in ICD-11
- Has already been recognized as distinct disorder in South Korea and China
- May include gaming on any electronic device, but most people who have clinically significant problems engage in internet gaming

# Proposed Diagnostic Criteria: ~~Internet Gaming Disorder~~



- Meet 5 or more criteria within 1 year
  - Preoccupation with gaming
  - Withdrawal symptoms when gaming is taken away or not possible (sadness, anxiety, irritability)
  - Tolerance, the need to spend more time gaming to satisfy the urge
  - Inability to reduce playing, unsuccessful attempts to quit gaming
  - Giving up other activities, loss of interest in previously enjoyed activities due to gaming
  - Continuing to game despite problems
  - Deceiving family members or others about the amount of time spent on gaming
  - The use of gaming to relieve negative moods, such as guilt or hopelessness
  - ~~Risk, having jeopardized or lost a job or relationship due to gaming~~



## Other related non-substance-related or behavioral “addictions”

- Compulsive behaviors that currently lack empirical evidence related to assessment and/or overlap with established psychiatric disorders
  - Sex
  - Eating/food
  - Exercise
  - Shopping
  - Internet (no consistent definition)
  - Tanning



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## Treatment for Behavioral Addictions

- Although there are no formal diagnostic criteria for behavioral addictions, several treatment programs have been developed and claim to treat behavioral addictions (e.g., rehabs for sex addiction)
  
- 12-step programs for these behaviors
  - Sex Addicts Anonymous, Sex and Love Addicts Anonymous (SLAA), Sexual Compulsives Anonymous (SCA), Sexaholics Anonymous (SA), Sexual Recovery Anonymous (SRA)
  - Overeaters Anonymous
  - Shopaholics Anonymous, Debtors Anonymous



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# Resources for A Winning Program

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- <http://www.addictionrecov.org>
- <http://www.ncpgambling.org>
- <http://www.gamblersanonymous.org>
- <http://www.ncrg.org>
- <http://mayoclinic.com/invoke.cfm?id=DS00443>
- <http://www.abgaminginstitute.ualberta.ca>
- <http://www.basisonline.org>