THE CARLAT REPORT ADDICTION TREATMENT ACE/CME Publication

CURRENT COVERAGE OF TOPICS IN ADDICTION MEDICINE

Daniel Carlat, MD Editor-in-Chief

Volume 2, Number 8 December 2014 www.carlataddictiontreatment.com

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Learning objectives for this issue: **1.** Summarize how to diagnose and treat patients with a gambling disorder. **2.** Describe what Internet gaming disorder is, the problems it causes, and the best way to treat it. **3.** Detail the different formulations of Suboxone and the advantages of each.

How to Diagnose and Treat Gambling Disorder

Daniel Carlat, MD Associate Clinical Professor of Psychiatry, Tufts University School of Medicine, Boston, MA

Dr. Carlat has disclosed that he has no relevant relationships or financial interests in any commercial company pertaining to this educational activity.



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With

the Expert

our typical patient with a gambling disorder may not fit yesterday's stereotype.

Consider this case study:

A 42-year-old woman presented for relationship issues and problems with gambling. She had begun gambling by buying scratch tickets when she was in her early 30s. At times, she would spend up to \$300 per day on these

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Summary

- Close to 1% of Americans have had a significant gambling disorder in their lifetime
- Effective psychological treatments include bevavioral therapy, cognitive therapy, and motivational therapy. Gambler's Anonymous meetings work too
- Naltrexone seems to be the most effective medication treatment

Internet Gaming Disorder: A New Addiction Nancy Petry, PhD

Editor, Psychology of Addictive Bebaviors Professor of Medicine, University of Connecticut School of Medicine Farmington, CT

Dr. Petry has disclosed that she has no relevant financial or other interests in any commercial companies pertaining to this educational activity.

CATR: Dr. Petry, what exactly is Internet gaming disorder?

Dr. Petry: It is a condition in which people spend so much time playing electronic games that the game playing is causing significant problems in their lives. The game playing can be over the Internet, but it can also be on any electronic medium, such as Nintendo, Xbox, etc. The problems encountered usually relate to school, work, or relationships with family and friends suffering due to excessive game playing.



CATR: Is it included as a psychiatric disorder in DSM-5?

Dr. Petry: There was a lot of discussion about it, but there are not yet sufficient data in terms of reliability or validity of diagnosis, or good understanding of the prognosis of the condition, to include it in the main text. So, it is listed in the research appendix of the *DSM-5*, under "Conditions for Further Study."

CATR: Do we know much about who these patients are? What would be the typical profile of a person with Internet gaming disorder?

Dr. Petry: We know most about it from the Southeast Asian countries where there are actually treatment camps set up for this condition. It is primarily older adolescents or young adult males who have developed very significant problems related to their excessive gaming. Basically, they might be playing 15 to 20 hours a day, and have given up other important aspects of life because of their excessive game playing. In the

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How to Diagnose and Treat Gambling Disorder Continued from page 1

lottery tickets. She had tried to solve the problem by avoiding convenience stores where the tickets were sold but bad found it difficult because they are so ubiquitous. She had often lied to ber busband about ber problem. She was preoccupied most of the day with thoughts about going to the store to buy more tickets. She began going to Gamblers Anonymous meetings, a twelve-step program for people with gambling problems, with some success. At the same time ber relationship with ber busband was deteriorating and she was reporting symptoms of depression robust enough to meet criteria for major depressive disorder. A trial of fluvoxamine at a dose of 100 mg/ day was successful for mitigating ber depressive symptoms and also belped ber to maintain ber attendance at all Gamblers Anonymous meetings and to stop ber gambling.

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All editorial content is peer reviewed by the editorial board. Dr. Frenz, Dr. Galloway, Dr. Krenztman, Dr. Sonkiss, and Dr. Weaver have disclosed that they have no relevant financial or other interests in any commercial companies pertaining to this educational activity. Dr. Balt discloses that his spouse is employed as a sales representative for Otsuka America, Inc. This CE/ CME activity is intended for psychologists, social workers, psychiatrists, and other mental health professionals with an interest in the diagnosis and treatment of addictive disorders. Gambling has changed over the years. For one, there's a whole lot more of it going on. About 75% of Americans above the age of 12 report having gambled in the past year, according to the National Council on Problem Gambling. Gambling is widespread, with some form of legalized gambling available in 48 states and the District of Columbia—only Utah and Hawaii have resisted the trend.

And there are more ways to gamble. Internet gambling is a new concern, along with the burgeoning phenomenon of social casino gaming—gambling games played on Facebook and other social networks. These games are the fastest growing segment of the gambling industry, with an estimated 170 million monthly average users and revenues of \$2 billion last year.

While gamblers tend not to seek out treatment (fewer than 10%), chances are you have seen patients with gambling issues, and you'll see more of them over the next few years. In this article we give you a primer on diagnosis and treatment of gambling disorder.

Diagnosing the Disorder

The basic *DSM-5* definition of gambling disorder is quite helpful: "the failure to resist gambling impulses despite severe personal, family, or occupational consequences." If you were to use this as your guide, chances are that you would accurately diagnose most cases of this disorder.

The name of the problem has changed over the years. DSM-III called it "compulsive gambling." In DSM-IV, it was renamed "pathological gambling" and the latest edition, DSM-5, calls it "gambling disorder," and has recategorized it as a type of addiction-you'll find it in the "Substance-Related and Addictive Disorders" section of the manual. Much ink has been spilt parsing out whether gambling disorder is more appropriately considered an impulse disorder (such as ADHD), a conduct disorder, an obsessive compulsive problem, or an addiction problem. Depending on the patient, there may be elements of all four. Keeping this in mind might give

you better insight into your particular patient's motivations, and will help you better tailor your treatment.

In order to formally diagnose gambling disorder, you have to establish that your patient has had at least four of a list of nine potential symptoms ("criteria") in a 12-month period, and that the gambling problem isn't caused by a manic episode. These core symptoms include factors such as wanting to gamble badly, always thinking about gambling, having a hard time resisting the urge to gamble, etc.

One way to remember the basic criteria is with the following mnemonic, Tempted With Casinos:

- Tolerance (a need to gamble with more and more money to achieve the gambling high)
- Withdrawal syndrome (feeling restless when forced to give up gambling)
- Loss of Control (not being able to stop your gambling even after multiple negative consequences)

A validated rapid screen for gambling problems is the CLiP questionnaire (similar to the CAGE questionnaire for substance abuse), which evaluates loss of control, lying, and preoccupation.

- 1. (Control) Have you ever tried to stop, cut down, or control your gambling?
- 2. (Lying) Have you ever lied to family members, friends, or others about how much you gamble or how much money you lost on gambling?
- 3. (Preoccupation) Have there ever been periods lasting two weeks or longer when you spent a lot of time thinking about your gambling experiences or planning out future gambling ventures or bets?

A positive answer to one of these questions indicates a high likelihood of problem gambling (Toce-Gerstein M et al, *J Gambl Stud* 2009;25(4):541–555).

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Prevalence

The well-known US National Comorbidity Survey Replication (which is somewhat outdated, since it is based on interviews conducted from 2001–2003) estimated that 78% of all Americans have gambled at least once in their lives, but only 0.6% have had pathological gambling, while 2.3% have had "problem gambling" (defined as meeting at least one symptom of *DSM-5's* criterion A).

The average age of onset of pathological gambling was about 17, the problem persisted an average of nine years, and the largest gambling loss in a single year averaged \$4,800. The average gambler partakes in a range of gambling activities. The most common types of gambling are lottos/scratch tickets (86% of pathological gamblers), slot machines or bingo (77%), and casinos (78%) (Kessler RC et al, *Psychol Med* 2008;38(9):1351–1360).

Patients with gambling disorder are at high risk for other psychiatric problems. In the Kessler study, 46% of pathological gamblers were alcohol or drug abusers, 60% had an anxiety disorder, 38% had depression, and 17% had bipolar disorder.

Etiology

While nobody knows what causes gambling addiction in a biological sense, experts note that many of the same brain regions light up among problem gamblers as among drug addicts—such as the ventral striatum and the orbitofrontal cortex (Bullock SA and Potenza MN, *Curr Psychopharmacol* 2012;1(1)). None of the neurobiological studies have produced successful treatment yet.

Treatment Psychosocial

This section is based mainly on a recent review of psychological treatments for gambling disorder (Rash CJ and Petry NM, *Psychol Res Behav Manag* 2014;7:285–295).

To begin with, it's probably helpful to know that gambling disorder is often transient, episodic, and self-resolving. Studies have shown that over the course of a given year about 33% of problem gamblers will recover on their own. In-depth interviews of people who have recovered on their own show that they use practical means to do so, including avoiding going to places that remind them of gambling, and involving themselves in time-consuming activities that take their minds off gambling.

As a clinician, you're more likely to see the more seriously affected patients who need treatment—either because they want it or because they are forced into it by spouses or the legal system. Studies of psychotherapy for gambling show that all techniques work better than no treatment at all, and no one technique is superior to others.

An easy intervention for a busy psychiatrist is to recommend that your patients attend Gamblers Anonymous (GA) meetings, which are increasingly widely available, especially during the current national binge to approve new casinos. As you can imagine, there are no good, randomized double-blind studies on GA (would such a study even be possible?), but various retrospective and open studies have implied a benefit of GA, at least for those who keep going to meetings. Thus, you can accurately tell patients that GA meetings are effective but only if they attend regularly.

In terms of more formal interventions, behavior therapy, cognitive therapy, and motivational interviewing all appear to work, at least better than no therapy at all. In behavior therapy you help your patients avoid high-risk situations and desensitize them to these environments when they can't avoid them. One strategy, for example, is to have patients gradually spend more and more time close to, and then inside of, casinos, and provide them with coping skills needed to avoid partaking of the gambling activities.

In cognitive therapy, you identify distorted cognitions associated with gambling, such as: overestimating the probability of winning; having an illusion of control over the outcome of the gambling; or the belief that a win is due after a series of losses (the so-called "gambler's fallacy"). It's likely that the most effective treatments combine cognitive and behavioral approaches.

A different approach is motivational interviewing. This is a technique often used in addictions in which you address your patient's ambivalence about whether they really want to stop the behavior and allow them to come up with their own reasons for doing so. Though studied less, motivational interviewing appears to work as well as other approaches.

Medications

Various medications have shown promise in helping patients with gambling disorder (you can find individual references in a recent review paper, Pirritano D et al, *Biomed Res Int* 2014:728038; while the paper focuses on the disorder in Parkinson's disease, it has a good general review of gambling treatment). Possibly the most robust data is on naltrexone, the opioid antagonist, which has shown benefit in both controlled and open trials, often at high doses up to 250 mg/day.

On the theory that gambling disorder shares certain features with OCD, SSRIs have been tested, but the results are mixed. For example, both fluvoxamine and paroxetine have been tested in small, randomized, controlled trials. In each case, one trial showed a benefit over placebo while the other did not. For the positive trials, the mean dose of fluvoxamine was 195 mg/day, and the mean dose of paroxetine was 51.7 mg/ day. The best way to think about SSRIs is that they might be effective for some people with gambling disorder, and are particularly worth trying if your patient has a comorbid condition responsive to SSRIs (as was true for my patient described in the vignette at the beginning of this article).

Another logical treatment approach is to use mood stabilizers, since one of the symptoms of mania is irresponsible spending, of which gambling is an example. One small study suggested that sustained release lithium (mean dose, 1150 mg once a day) might be effective (Hollander E et al, *Am J Psychiatry*, 2005;162(1):137–145).

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Expert Interview

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United States, the research has been much more limited. We definitely know that a large proportion of adolescents, young adults, and even young kids play these electronic games. However, the proportion that seems to be developing significant problems with it in Western countries is probably about 1%, and again, it is mostly boys and adolescents to young adults.

CATR: Do we know much about how someone would present for treatment? Do their parents drag them in or do they bring themselves in seeking treatment?

Dr. Petry: I think it is like many addictions in that regard. There are not a lot of people seeking treatment. There are some treatment centers for more broadly based Internet addiction. For instance, there is a residential program outside Seattle called the reSTART Internet Addiction Recovery Program. But for the most part, what tends to happen is that parents might bring their kids in for depression or ADHD, and also express concern about their excessive game-playing behaviors.

CATR: So if physicians are confronted with this, what should they do? They can apply the criteria in DSM-5 and say it appears to be Internet gaming disorder, but then where do they go?

Dr. Petry: The *DSM-5* criteria are a start, but physicians can also look at whether there are comorbid disorders, such as ADHD, depression, or social anxiety disorders. Other conditions should be treated, pharmacologically or psychologically, or both. In terms of treating Internet gaming disorder specifically, clinicians have been applying cognitive behavioral techniques, which have been found effective in other addictive disorders, toward the gaming and the game-playing problems.

CATR: This is a little simple-minded, but if you are dealing with an adolescent, do you counsel the parent to take away the devices?

Dr. Petry: This might be a possible way to manage the situation, but it becomes complicated. Can you completely take away the gaming device? If it is a computer, and the adolescent is using it for homework and other purposes, that may not be possible, but what you could do is counsel the parents to restrict use of these devices. Some data show that when parents have very firm and well-understood guidelines on what is acceptable, and what is not, in terms of game-playing behavior and Internet use, children tend to develop far fewer issues than when parents don't have clear guidelines or enforce them. That is one thing I would definitely recommend parents do if they are worried about problems developing—have clear rules about use of computers and games, and make sure the child understands the rules and follows them. That takes effort on the parent's part, but it will help ensure that kids don't overuse these games.

CATR: Are there other steps parents can take to prevent problems?

Dr. Petry: Some of the other things that appear to be important are having the gaming device in a more public area of the home. Kids who have televisions or gaming consoles in their bedroom seem to develop problems with them at higher rates than when the game playing is restricted to a more family environment. In that case, there are social controls over its use and it becomes obvious when the kid is using it and excessive use can be more readily addressed.

CATR: In terms of the Asian experience, are there any data on how effective these treatment 'camps' are?

Dr. Petry: There is very little systematic evidence, such as clinical trials with random assignment. A large treatment camp is in Beijing, China. The director who runs that program says they have treated over 6,000 people there. They have followed up with some of the patients and are finding half or more are greatly reducing their gaming.

CATR: How does treatment work?

Dr. Petry: The Beijing treatment camp provides a very comprehensive and holistic approach, but it is also very culturally tailored. For example, they've got work camps associated with it. They do cognitive behavioral therapy, motivational therapy, and family therapy. And they are mandating that the parents also attend parent groups, as well as family counseling sessions where they attempt to address some of the other underlying issues that are ongoing in the family structure.

CATR: Do we know how this disorder progresses?

Dr. Petry: There have been a couple of studies in which researchers followed kids over time. It does appear that a fair number of these kids who develop problems with excessive gaming will, with time, reduce problems, even without treatment. So it might be an example of a developmental phenomenon in which problems present at some points, but many persons who experience problems eventually are able to overcome them, even without help. That is similar to what you see with substance use disorders as well. For instance, especially in the late teens and early 20s you see a lot more binge drinking and alcohol problems beginning to develop. Some of those kids certainly do go on to develop full-scale alcohol use disorders, but a significant proportion of them outgrow the problems as well.

CATR: That is a great point because a lot of times parents wonder if they need to seek help for their child.

Dr. Petry: Parents wonder, "Should we try to intervene with this or is he going to overcome it?" According to the little data that we do have available in the US, over 90% of kids play these games, and many of them play them quite frequently. On any given day, two-thirds of adolescents and even pre-adolescents are playing electronic games, and for most of them it is non-problematic—on average, an hour a day or maybe an hour and a half on weekends. Most of these kids will not experience problems with their game playing or need help, but some will.

CATR: When does it begin to be a problem?

Dr. Petry: The kids who have developed problems with gaming seem to be playing every day or almost every day and for even longer durations, such as 20 hours a week or more. That doesn't mean that everyone who is playing 20 hours a week or more has a problem with it, because a fair number of even those kids with high frequency/high intensity playing still haven't experienced adverse effects. It is just consuming all their free time. A couple of studies have found that as kids get into their older high school



Expert Interview Continued from page 4

years the frequency of play tends to drop off a little, but the duration of play increases. So rather than 30- to 60-minute game playing episodes daily, older adolescents might play for an hour and a half at a time—but for only two or three days a week. **CART: So gaming use morphs a little bit as they age?**

Dr. Petry: Yes, probably because there are other things going on in their lives and they are doing other things rather than playing the games, especially as they get older. If you are home and you don't have friends over or you are not involved with family members, what are you going to do? You are going to go on the computer and play these games, and that is what a lot of these kids are doing. It is something that is always available for many kids. I think they are doing it to fill unoccupied time, and it is something that is fun and engaging and they are good at it. When it's becoming a problem, kids are giving up other activities that are or used to be important to them

When it's a problem, [people] are failing courses or skipping school to play the games, or they are giving up other activities they once enjoyed because the game playing has become all consuming.

Nancy Petry, PhD

to play the games. When it's a problem, they are failing courses or skipping school to play the games, or they are giving up other activities they once enjoyed because the game playing has become all consuming.

CATR: Do you believe that this is actually an "addiction"?

Dr. Petry: That is the big question. So what defines addiction? Some define it as the repetitive engagement in a behavior that has some positive aspects, at least when you are initially engaging in it, but continued and escalating behavior leads to longer term negative aspects. One of my areas of expertise is with gambling disorder, which is indeed like substance use disorders in many regards, but it is distinct in others. A lot of controversy occurred with the *DSM-5* and introduction of behavioral addictions. Not everything can be an addiction. You can't just blindly apply these criteria to any behavior pattern and then say it is a mental disorder. We really have to understand what constitutes an addiction and what problems are developing as a result. Internet gaming disorder is primarily affecting adolescents and young adults. The types of problems they are encountering tend to be different than what you would see with adults with other addictive disorders.

CATR: That is a good point because I read a recent systematic review and the contention was that something like 50% of the population had an addiction of some sort, including broad constructs such as addiction to love or to food (Sussman S et al, *Eval Health Prof* 2011;34(1):3-56).

Dr. Petry: I think the DSM criteria for Internet gaming disorder is clear on that point—it doesn't just mean you are playing games, or engaging in any behavior a lot because you like it. That is not an addiction; it is when clinically significant adverse consequences emerge that something may be considered an addiction.

CATR: So in terms of guidance for clinicians, they should sleuth out comorbid disorders such as ADHD and mood disorders and treat them, because if they are the driver, some of the symptoms will improve. Is that a fair statement? **Dr. Petry:** Yes, you certainly want to look for other comorbid conditions and treat them. In terms of Internet gaming, I think some of the techniques that have been applied in the context of gambling disorder and substance use disorders appear on the surface to be directly applicable to the gaming disorder as well. So you want to monitor and track a patient's playing time to find out when the high-risk times are and the triggers for playing games. For instance, is a patient playing more when he had a bad day at school or he got into an argument with a parent? Then try to help them recognize when those patterns of excessive game playing games. Focus on what else a patient can do during high-risk times to decrease the likelihood that he will play games. The traditional cognitive behavioral techniques that are used for other addictive disorders can be adapted to game playing and may help. If a patient has few other social or recreational activities, actively encouraging him to develop an interest in and participate in other activities is also key. Game playing often fills 20 or more hours a week for these kids. If they are no longer playing games, they need to fill this unstructured time with other more positive activities. Therapists, parents, other family members, and friends may all be needed to help fill this void.

CATR: Thank you, Dr. Petry.

How to Diagnose and Treat Gambling Disorder Continued from page 3

One interesting aspect of the psychopharmacology of gambling is that when patients with Parkinson's disease are given dopamine agonist medications (which are the most effect treatments for the disorder), their risk of developing gambling disorder increases by 50%. The implication for non-Parkinson's patients

is, theoretically, that gambling disorder is caused by too much dopamine, and that dopamine blockers (ie, antipsychotics) should be effective. But they are not. Three studies of olanzapine have been negative, and small studies of aripiprazole have indicated that it might actually *worsen* gambling behavior.

DR. Gambling disorder is treatable—refer patients to GA, use cognitive behavioral therapy, and try naltrexone for core symptoms, and SSRIs when there are comorbidities.



Suboxone Formulations: And Then There Were Five

Daniel Carlat, MD

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Dr. Carlat has disclosed that he has no relevant relationships or financial interests in any commercial company pertaining to this educational activity.

F irst approved in 2002, Suboxone, a sublingual pill, was undoubtedly a breakthrough in opiate addiction treatment—especially as compared to methadone. Unlike methadone, Suboxone could be prescribed in the office and filled at pharmacies, freeing patients from the shackles of the methodone lifestyle and its required daily clinic visits.

We've written about Suboxone before (*CATR* May 2014 and an overview in its sister publication, *The Carlat Psychiatry Report* May 2010) so for basic information about the medication, please see those articles. The picture changed in 2010, however, when Suboxone's original marketing exclusivity protection expired, leading to the current confusing landscape of five different versions from which to choose. Keep in mind, however, all the formulations are bioequivalent composed of the same two molecules buprenorphine and naloxone, in a 4:1 ratio.

The Back Story

In 2010, Suboxone's marketing exclusivity period expired. Reckitt Benckiser (RB) Pharmaceuticals, Suboxone's manufacturer, was concerned about generic competition, which generally leads to an 80% loss of sales of the branded product within a year. However, RB was prepared, because it had already developed a Suboxone sublingual film for which it received approval from the US Food and Drug Administration (FDA) in August of 2010.

As is common practice in pharmaceutical marketing, RB reps tried to convince doctors to switch patients from the generic pill to the new film version. Their pitch had to do with safety—namely, that children were more able to access the pills than the film, which is wrapped in hard-to-open foil packaging. In addition, the company tried to convince the FDA to reject applications from generic drug companies seeking approval for their cheap versions of the buprenorphine/naloxone pill. RB's tactic was to file a "Citizen's Petition" to the FDA, arguing that these formulations (identical to the drug RB had marketed to doctors for years) were unsafe and should be blocked from entering the market. Luckily for cost-conscious patients, the FDA was unconvinced by RB's argument and denied the petition. Furthermore, suspecting that the petition was a sham to discourage competitors, the FDA referred the case to the Federal Trade Commission, which led to an active investigation of potential antitrust activities (see http://bit.ly/1FbW7z0).

Comparing the Formulations

There are a number of factors to consider in comparing the various formulations.

Bioavailability: This is the fraction of the drug that actually makes its way into the bloodstream and to the brain. Recall that after we ingest a regular pill, the molecules get absorbed by the

Buprenorphine/Naloxone: Currently Available Formulations				
Name	Formulation	Doses buprenorphine/naloxone		
Buprenorphine/naloxone generics (two versions)	Sublingual tablets	2 mg/0.5 mg 8 mg/2 mg		
Zubsolv	Sublingual tablets	1.4 mg/0.36 mg 5.7 mg/1.4 mg		
Suboxone	Sublingual film	2 mg/0.5 mg 4 mg/1 mg 8 mg/2 mg 12 mg/3 mg		
Bunavail	Buccal film	2.1 mg/0.3 mg 4.2 mg/0.7 mg 6.3 mg/1 mg		

microvilli of the intestine, and then go into the portal circulation and are sent directly to the liver. The liver metabolizes compounds before sending them into the systemic circulation. This passing through the liver is called the first pass effect, and it serves to remove some fraction of the drug from circulation. The degree of this effect varies significantly from drug to drug.

The only way to completely avoid the first pass effect is to administer drugs intravenously. That way, 100% of the drug gets into systemic circulation, meaning that the bioavailability is 100%. Another way to try to bypass the liver is to create sublingual drugs, which are supposed to dissolve under the tongue and get absorbed into the oral mucosa. These capillaries go directly to systemic circulation.

All buprenorphine/naloxone preparations exploit this route in some way or another, but they vary in how effectively they do it. The greater the bioavailability, the lower the dose required, which is why, for example, Bunavail (the citrus-flavored buccal film approved in June 2014) 4.2 mg is equivalent to sublingual bup/nal 8 mg.

Speed of onset: While all the formulations dissolve and get absorbed somewhere in the mouth, some get absorbed more quickly than others. A faster absorption means that a patient who is in withdrawal in your office will get somewhat faster relief from those symptoms—but we're only talking about 10 or 15 minutes difference at most.

Side effects: Opiates tend to cause constipation and lowered libido. Manufacturers may claim side effect advantages depending on their safety data.

Dose required: The more bioavailable formulations require a lower number of milligrams to achieve the same effect. One theoretical advantage of fewer milligrams is that diversion will yield less milligrams of opiates on the streets. A possible disadvantage is a psychological one—patients who are used to taking 8 mg of Suboxone may erroneously believe they are getting too little by taking 4.2 mg of Bunavail. This "nocebo" effect can be significant when

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THE CARLAT REPORT: ADDICTION TREATMENT

CE/CME Post-Test

To earn CE or CME credit, you must read the articles and log on to www.CarletAddictionTreatment.com to take the post-test. You must answer at least four questions correctly to earn credit. You will be given two attempts to pass the test. Tests must be taken by December 31, 2015. As a subscriber to *CATR*, you already have a username and password to log on www.CarlatAddictionTreatment.com. To obtain your username and password or if you cannot take the test online, please email info@thecarlatreport.com or call 978-499-0583.

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Below are the questions for this month's CE/CME post-test. This page is intended as a study guide. Please complete the test online at www.carlataddictiontreatment.com. Note: Learning objectives are listed on page 1.

1. When it comes to gambling, which of the following is true (Learning Objective #1)?

- [] a) About 96% of Americans above the age of 12 report having gambled in the past year
- [] b) Some form of legalized gambling is available in all the US states
- [] c) Social casino gaming played on social networks is the fastest growing segment of the gambling industry
- [] d) Most people with a gambling problem will seek out treatment
- 2. Which of the following is among the psychological treatments that appear to work in treatment of gambling disorder (LO #1)?
 [] a) Behavior therapy
 [] b) Mindfulness
 [] c) Family therapy
 [] d) Acceptance and commitment therapy
- 3. Internet gaming disorder is a condition in which people spend so much time playing electronic games that which of the following occurs (LO #2)?
 - [] a) The game playing becomes all consuming[] c) The game playing leads to substance abuse
- [] b) The game playing leads to significant loss of money
- [] d) The game playing causes physical illness
- 4. Internet gaming disorder primarily affects which population of patients (LO #2)?
 - [] a) Adults with gambling disorder
 - [] c) Young girls

- [] b) Male adolescents and young adults
- [] d) Female adolescents
- 5. Which formulation is the newest version of buprenorphine/naloxone (LO #3)?

 [] a) Sublingual tablets
 [] b) Sublingual film
 [] c) Buccal film
 [] d) Oral pill

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Suboxone Formulations: And Then There Were Five Continued from page 6

it comes to very subjective perceptions of opiate effects.

Now let's take a look at the various formulations currently on the market (note that the doses indicate buprenorphine/naloxone; prices were retrieved in January 2015 from the Good Rx website and indicate prices available at Walmart):

Sublingual Tablets—Generic

At the time of this writing, there are two generic versions of the sublingual tablets, manufactured by Amneal Pharmaceuticals and Actavis.

Doses available: 2 mg/0.5 mg and 8 mg/2 mg Bioavailability: Low Cost for one month supply (30 pills) at 8 mg/2 mg dose/day: \$185.22 Advantages: Long track record of use, cheap Disadvantages: Some complain about the taste

Sublingual Tablets—Branded (Zubsolv)

Manufacturer: Orexo Dose: 1.4 mg/0.36 mg, 5.7 mg/1.4 mg Bioavailability: Medium Cost for one month supply (30 pills) at 5.7 mg/1.4 mg dose/day: \$224.80 Advantage: Menthol flavor, higher

bioavailability than generics (33% vs. 25% for generics) Disadvantage: Higher cost than

generics

Sublingual film—(Suboxone)

Manufacturer: Reckitt Benckiser Bioavailability: Low Doses: 2 mg/0.5 mg, 4 mg/1 mg, 8 mg/2 mg, 12 mg/3 mg Cost for one month supply (30 pills) at 8 mg/2 mg dose/day: \$224.80 Advantages:

- Faster absorption, meaning faster onset of effect
- Easy to taper gradually because you can cut the film into very small sizes
- Packaging makes it more difficult for kids to open

Disadvantages:

- More diversion potential because you can easily mail the strips (this has been a problem in prisons, where inmates have received mail)
- High cost

Buccal film-(Bunavail)

Manufacturer: BioDelivery Sciences International Inc. (BDSI) Bioavailability: Highest of all preparations, about 50% Doses: 2.1 mg/0.3 mg, 4.2 mg/0.7 mg, 6.3 mg/1 mg

Continued on page 8

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- Faster absorption, faster onset of effect
- Less constipation
- Potentially more convenient to take then sublingual tablets or films, because bunavail sticks to the cheek while dissolving, allowing patient to talk. The company markets this as making the drug more "discrete."

Disadvantages:

- Possibly more difficult to cut and taper than sublingual film, since cutting Bunavail may affect how well it sticks to the cheek mucosa
- High cost

A special thank you to Jeffrey Junig MD, PhD, who belped us find information for this article. See his blog, Suboxone Talk Zone (www.suboxonetalkzone.com) for an inexhaustible supply of Suboxone knowledge.

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