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Editor-in-Chief

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IN THIS ISSUE

Focus of the Month: Relapse Prevention

- Relapse: Why It Occurs and How to Prevent It — 1
- Expert Q&A: — 1
A. Thomas McLellan, PhD,
Treating Addiction as a Chronic Disease
- Substance Cravings and Addiction Relapse — 4
- News of Note — 5
- Research Updates — 6
 - Study Looks at Best Way to Treat PTSD and Alcohol Use Disorder
 - The Consequences of Mixing Alcohol and Energy Drinks
 - Want Some Fries With That?
- CME Test — 7

Learning objectives for this issue:

1. Describe relapse prevention therapy (RPT).
2. Summarize the paradigm change whereby addiction is treated as a chronic disease.
3. Explain the role of cravings in relapse and how this symptom might help predict relapse.
4. Understand some current research regarding addiction.

Relapse: Why It Occurs and How to Prevent It

Terence T. Gorski, MA, MAC, NCAC II, Florida CAP
Founder and president, The CENAPS Corporation, Spring Hill, FL

Mr. Gorski has disclosed that he has no relevant financial or other interests in any commercial companies pertaining to this educational activity.

Relapse usually does not occur suddenly, nor do people plan their return to addictive substance use. From the client's point of view, it just seems to happen. But there are always indicators that trouble is brewing.

Early students of addiction—the members of Alcoholics Anonymous—noticed a paradox: people with substance use disorders often act in ways inconsistent with their conscious intentions. Widely referred to as the “Big Book,” the book *Alcoholics Anonymous*

Continued on page 2

Summary

- Preventing relapse is a major challenge for people with addiction and should be a focus for clinicians treating them for substance abuse.
- Clinicians can help their clients learn to identify early relapse warning signs such as feelings of boredom or depression, cravings, or lack of a firm commitment to abstinence.
- The effectiveness of relapse prevention therapy has been proven for various substance use disorders.



Treating Addiction as a Chronic Disease

A. Thomas McLellan, PhD

CEO and Cofounder, The Treatment Research Institute, Philadelphia, PA



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

CATR: As we all know, relapse is pretty common among patients with addiction. Why do you think this is?

Dr. McLellan: Relapse rates, which are somewhere between 40%–60% following completion of addiction treatment, are quite comparable to relapse rates in hypertension, diabetes, asthma, chronic pain, even tooth decay (McLellan AT et al, *JAMA* 2000;284(13):1689–1695). So I think some of this is endemic to the nature of chronic illness. There is no cure, by definition, for a chronic illness. It requires management, and with that comes problems, including treatment adherence.

CATR: And addiction is a chronic disease?

Dr. McLellan: Yes. There is no cure for addiction. Some fixed amount of inpatient days or outpatient visits will not correct the brain changes and genetic expression that have occurred. It will need continued management, perhaps using the chronic care model that has been so successfully used in other chronic illnesses.

CATR: But currently acute care models are generally used to treat addiction. Why is that?

Dr. McLellan: Not very long ago, in the 1950s and 1960s, addiction was considered a sign of weak character; not a disease. Then lots of college kids and returning Vietnam War veterans were becoming addicted to drugs, so they had to have treatment. But

Continued on page 3

Relapse: Why It Occurs and How to Prevent It

Continued from page 1

contains a vignette about Jim, a salesman, who stopped at a restaurant for lunch. Although Jim wasn't thinking about alcohol or relapse, here's what happened:

"Suddenly the thought crossed my mind that if I were to put an ounce of whiskey in my milk it couldn't hurt me on a full stomach. I ordered a whiskey and poured it into the milk. I vaguely sensed I was not being any too smart, but felt reassured as I was taking the milk on a full stomach" (Alcoholics Anonymous, 3rd ed. New York: Alcoholics Anonymous World Services, 1976:35).

Decades after the Big Book was first published, we now have a better understanding of why people like Jim relapse. Causes include high-risk environmental factors where cues to use substances are present, such as people, places, and things that have been associated with prior drug use. In Jim's

case, for example, relapse occurred in a restaurant that he had visited many times when he was still drinking.

Relapse can also be related to personal factors including substance cravings, negative affect, stress, self-efficacy, and coping skills (see for example Koob GF, *Front Psychiatry* 2013;4:72). Negative affect refers to problems with mood and anxiety, whereas self-efficacy is often defined as a person's belief in his or her ability to deal with certain situations.

Here, too, Jim's case is instructive. He noted that he had eaten at the restaurant many times without drinking (self-efficacy) but earlier in the day had a minor dust-up with his boss (stress) and felt irritated (negative affect).

Preventing Relapse

Once patients learn to identify relapse warning signs—such as a lack of a firm commitment to abstinence, addiction-related feelings including boredom, stress, anger, or depression, or cravings for alcohol or drugs—they can begin to manage them. (For more about how substance cravings can be a factor in relapse, see "Substance Cravings and Addiction Relapse" on p. 4.)

The effectiveness of relapse prevention therapy (RPT) has been proven for various substance use disorders (see for example Irvin JE et al, *J Consult Clin Psychol* 1999;67(4):563–570). RPT generally occurs in a group session lasting up to 90 minutes with a standard structure that includes allocated time for interactive exercises

and group discussion. The format can be condensed and modified when dealing with individual clients during shorter appointments.

RPT involves first physically, psychologically, and socially stabilizing a patient—by having him move out of an apartment with a drug-abusing roommate, for example. Next, we get to the root of what is making him want to use again, and help him understand and recognize early relapse warning signs.

I might have a client write down his life and addiction history and look at why he relapsed in the past. I will also have him develop a list of signs, such as irrational thoughts and unmanageable feelings, as well as situations, such as hanging around with old drug-using peers, that may lead him back to substance use.

Finally, we put into place strategies for preventing relapse. These include detailed daily planning and personal check-ins to make sure he is keeping with the program. I will have the client write a "recovery plan"—a schedule of activities that he knows will help him stay sober, such as working a 12-step program and attending relapse prevention support groups—and compare it to the list of high-risk situations and early relapse warning signs. What will he do when faced with a high-risk situation? Techniques include mental rehearsal, role-playing, and therapeutic assignments. For example, if he goes into a bar where he used to drink, he will plan to call his AA sponsor and go to the

— Continued on page 3

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Nine Steps to Prevent Relapse

One model of relapse prevention therapy (RPT) involves nine steps for learning to recognize, manage, and possibly prevent the early warning signs of relapse. They include:

1. Stabilization
2. Assessment
3. Relapse education
4. Warning sign identification and management
5. Recovery planning
6. Inventory training
7. Family involvement
8. Relapse prevention check-ups

For detailed information on the Gorski-CENAPS model of RPT, visit www.cenaps.com or see Gorski TT, The CENAPS Model of Relapse Prevention Therapy. In: Approaches to Drug Abuse Counseling. Bethesda, MD: National Institute on Drug Abuse, 2000:23–38.

Relapse: Why It Occurs and How to Prevent It

Continued from page 2

next available AA meeting.

I recommend that clients start each day by reading something that focuses the mind on sober and responsible living and then planning out the day. I recommend they end the day by confirming that they completed everything on the recovery plan and reflecting on how they dealt with various challenges. If there are issues, the client then decides whether to tap into his support network to talk about the day before going to bed.

There is clear evidence that when families are involved in the process of relapse prevention, clients are more likely to stay sober (Fals-Stewart W et al, *J Fam Ther* 2009;31(2):115–125). At each step, get family members appropriately involved in treatment.

The pattern of addictive thinking that can cause people to make bad decisions that lead them back to alcohol and other drugs is very strong. Ongoing professional monitoring is needed. Recovery checkups to review and update the relapse prevention plan should occur on a regular schedule. At minimum, I recommend monthly visits for three months, quarterly visits for the next two years, and then annual visits for at least the next five years. A detailed clinical manual, “Recovery Management Checkups: An Early Re-Intervention Approach,” is available (<http://bit.ly/18NIGRi>).

Additional Resources on Relapse Prevention

Various books are available on relapse prevention therapy, including the following

For clinicians: *Therapist’s Guide to Evidence-Based Relapse Prevention*, edited by Katie A. Witkiewitz and G. Alan Marlatt. Burlington, MA: Academic Press, 2007.

For clients: *Starting Recovery with Relapse Prevention* by Terence T. Gorski. Independence, MO: Herald House, 2012.

For clinicians and clients: *Relapse Prevention Workbook* by Bradley A. Hedges. Lancaster, OH: Mid-Ohio Psychological Services, 2012 (available as a free online resource at: <http://bit.ly/1aM5K4r>).

Expert Interview

Continued from page 1

nobody understood what addiction was about and they developed the kinds of corrective care that was available at that period in time: therapeutic models with confrontation. The result was the creation of specialty acute care programs for treatment of addictions.

CATR: And you believe a chronic care model is more fitting?

Dr. McLellan: The principles of treating chronic illness are well established (Wagner EH et al, *Milbank Q* 1996;74(4):511–544; Bodenheimer T et al, *JAMA* 2002;288(15):1909–1914). Number one is the recognition that the best way to treat a chronic illness is to prevent it, because they don’t have cures for diabetes, or hypertension, or asthma. In turn, you’ve got to make early detection a priority. And as important as detection is, so is early intervention.

CATR: Using this model, what might be early treatments for addiction?

Dr. McLellan: For opioid, alcohol, and cigarette addiction, we have effective medications. There are also many effective psychosocial interventions. However, they are usually provided in time-limited doses. There needs to be emphasis on prevention and early intervention because it is cheap and effective and should be done in all schools, colleges, and public health settings. And when the disease actually takes root, you go to the chronic care model.

CATR: Do you see the chronic care model being used for addiction at all?

Dr. McLellan: Yes. If you want the best example, look at how addicted physicians and airline pilots are treated. They get qualitatively different care than anybody else, and I don’t think there is another illness where that is true. If you are a physician and get diabetes care it is not qualitatively different than the care provided to a longshoreman or a school teacher. But it is different in the addiction field. Through their health plans, physicians and airline pilots get five years of monitoring, management, and care. We have reviewed the literature, and it is remarkably effective (McLellan AT et al, *BMJ* 2008;337:a2038).

Continued on page 8

As important as detection is, so is early intervention.

A. Thomas McLellan, PhD

Training Healthcare Professionals in Addiction Treatment

Despite the prevalence of addiction in the US, very few physicians are specifically trained to diagnose and treat substance abuse. However, change is underway as a number of physician groups and private organizations are working to better educate future doctors.

The American Society of Addiction Medicine and other professional societies associated with addiction medicine have agreed on 10 core topics to be part of an introductory course for second-year medical students. The Coalition On Physician Education in Substance Use Disorders (www.cope-assn.org), has been meeting with leaders from some of the nation’s medical schools to advocate for substance abuse education.

Dr. A. Thomas McLellan’s non-profit research organization, The Treatment Research Institute, is working with the Betty Ford Clinic and others to develop a standardized, elective course on the treatment of substance use disorders that will be available online nationwide to medical schools by summer of 2014 (see www.tresearch.org for more information).

In addition, the American Board of Addiction Medicine offers guidelines on standardized requirements for addiction medicine fellowship programs to meet the stringent standards for this board certification. Currently, 19 fellowship programs in North America have been accredited by ABAM (you can see the list at www.abamfoundation.org).

For more information on gaps in training and education on substance abuse, see Wood E et al, *JAMA* 2013;310(16):1673–1674.

Substance Cravings and Addiction Relapse

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

Patients with addiction complain of cravings so frequently that sometimes it's difficult to make sense of them. They are a common symptom and one that may serve as a predictor of whether a patient will relapse.

What are cravings? At the most basic level, cravings are thoughts and urges to use a substance. Studies have shown, however, that cravings have much greater texture and are the product of multiple factors (Jimenez M et al, *Eur Addict Res* 2009;15(3):135–142).

These include positive reinforcement (the rewarding aspects of substance use), negative reinforcement (the distressing emotions that substance use takes away), and impaired control (impulsive or compulsive substance use).

Classically, cravings have been described as either positive or negative, depending of what the patient is feeling and expecting (Tiffany ST, *Alcohol Res Health* 1999;23(3):215–224). Positive cravings are associated with the patient's anticipation of pleasure (the "buzz" or "high"), whereas negative cravings, also known as "relief cravings," address negative affect, such as problems with mood, anxiety, stress, or withdrawal symptoms.

Research has shown that addiction involves maladaptive memory, which has led some to conceptualize cravings "as the memory of the pleasant rewarding effects of drugs of abuse superimposed on a negative emotional state" (Koob GF and Le Moal M, *Annu Rev Psychol* 2008;59:29–53). Cravings are further described as either Type 1 if they are triggered by drug-related cues and stimuli, or Type 2 if a negative emotional state is also involved.

All of this is fairly consistent with the wisdom of Alcoholics Anonymous. People in recovery have long known that "people, places, and things" (Type 1 cravings) can lead to relapse. The "Big Book" also famously describes alcoholics as "restless,

irritable, and discontented" (reflecting negative affect or Type 2 cravings).

Assessing a Patient's Cravings

In addition to asking about a patient's cravings, you can use validated ratings scales to measure them, as more addiction professionals are starting to do.

Scales and measures are assuming an ever-greater role in mental health and addiction treatment. Part of this is a result of the Patient Protection and Affordable Care Act of 2010, which has ushered in the era of "accountable care" predicated on measurable treatment outcomes.

Another driver is sound clinical practice. Clinicians generally strive to create treatments plans with specific goals—such as symptom reduction—that can be measured. It's pretty hard to track progress toward those goals without some sort of scale.

There are many instruments for measuring alcohol cravings. Various other scales and measures are available for cannabis, cocaine, nicotine, and opioids (Heishman SJ et al, *Drug Alcohol Depend* 2009;102(1–3):35–40; Sussner BD et al, *Drug Alcohol Depend* 2006;83(3):233–237).

Penn Alcohol Craving Scale

(PACS). I like the PACS, a self-report instrument with good validity (Flannery BA et al, *Alcohol Clin Exp Res* 1999;23(8):1289–1295). PACS consists of five questions about the frequency, duration, and intensity of alcohol cravings over the past week. Total scores can range from zero to 30, where higher scores represent more intense cravings. Here's a sample item:

How often have you thought about drinking or about how good a drink would make you feel? (0 = Never; 6 = Nearly all the time)

The Obsessive Compulsive

Drinking Scale (OCDS). The OCDS is another self-report instrument, often used in clinical trials (Anton RF et al, *Alcohol Clin Exp Res* 1995;19(1):92–99; Anton RF et al, *Arch Gen Psychiatry* 1996;53(3):225–231). It contains 14 questions, which makes it impractical for routine clinical use. However, six questions specifically deal with cravings, and you could pull one or two of those items

to help assess cravings in your patient.

Do Cravings Lead to Relapse?

A number of studies have examined the relationship between alcohol cravings and addiction relapse. The most recent investigation was performed at the Mayo Clinic using a prospective cohort of 314 adults with alcohol dependence that received residential substance abuse treatment (Schneekloth TD et al, *Am J Addict* 2012;21:Suppl 1:S20–S26).

Researchers asked about such factors as drinking histories, the presence of psychiatric comorbidity, the severity of depressive symptoms, the number of prior treatments, and whether anti-relapse medications were prescribed at program discharge. Researchers also measured participants' alcohol cravings using PACS. Data were obtained from patients at program admission, weekly during treatment, at program discharge, and quarterly following release to the community.

PACS scores and the number of prior treatments were the only factors that predicted relapse when all the above variables were combined. The risk of relapse increased by 6% for each one-point increase in discharge PACS scores. In other words, the more intense cravings were at discharge from treatment, the more likely the person was to relapse.

The strongest predictor of success was a PACS score of less than seven on admission: 72% of these patients remained abstinent during the first six months following treatment. Conversely, about 60% of patients with an admission PACS score ≥ 7 or a discharge PACS score ≥ 4 relapsed within the six-month timeframe.

This study replicated prior work using PACS and OCDS that found that craving scores were a better predictor of drinking behavior than prior drinking patterns (Flannery BA et al, *J Stud Alcohol* 2003;64(1):120–126). Other studies have found that rate of change in cravings scores can discriminate abstainers from those who relapse (Anton 1996, op.cit; Kranzler HR et al, *Alcohol Clin Exp Res* 1999;23(1):108–114). This separation occurred within the first two weeks of treatment.

Continued on page 5

News of Note

FDA Makes Safety Labeling Changes

In September, the US Food and Drug Administration (FDA) proposed safety labeling changes for extended-release and long-acting (ER/LA) opioid analgesics intended to treat pain.

The FDA also implemented new postmarket study requirements for these medications.

“The FDA is invoking its authority to require safety labeling changes and postmarket studies to combat the crisis of misuse, abuse, addiction, overdose, and death from these potent drugs that have harmed too many patients and devastated too many families and communities,” said FDA Commissioner Margaret A. Hamburg, MD, in an agency news release.

When finalized, the updated medication label will include new language for healthcare professionals. ER/LA opioids should be prescribed “for the management of pain severe enough to require daily, around-the-clock, long-term opioid treatment and for which alternative treatments are inadequate.”

Physicians should prescribe the medications only for patients for whom alternative options, such as non-opioid analgesics or immediate-release opioids, are ineffective, not tolerated, or are otherwise insufficient to provide management of pain. These medications should not be prescribed for as-needed pain relief.

The FDA will also require drug com-

panies that make these medications to conduct further studies and clinical trials to assess the risks associated with long-term use of ER/LA opioids.

In addition, the FDA will require a new boxed warning on these medications cautioning that chronic use of these products by a mother during pregnancy can result in neonatal opioid withdrawal syndrome (NOWS), which may be life-threatening to her baby. To learn more, go to <http://1.usa.gov/14Cp59F>.

Attorneys General Urge FDA to Regulate e-Cigarettes

A group of 40 attorneys general from across the country sent a letter in September to the US Food and Drug Administration (FDA) urging the agency to regulate electronic cigarettes as it now regulates tobacco products.

The letter urged the federal regulatory agency to ban sales of so-called e-cigarettes to minors and to put a stop to youth-oriented advertising of the product. Electronic cigarettes resemble traditional cigarettes but use batteries to heat a nicotine-containing liquid, producing a vapor that the smoker inhales. There is no federal restriction on buying or using e-cigarettes.

The FDA has announced its intention to regulate e-cigarettes and the letter urged the agency to not delay and issue proposed regulations. To read the letter, go to <http://1.usa.gov/16SkiC0>.

Two Major Addiction Treatment Centers to Merge

Two of the biggest names in addiction treatment—Hazelden in Minnesota and the Betty Ford Clinic in California—plan to merge and will create the largest nonprofit addiction treatment provider in the country.

News of the merger of the organizations into a single entity was reported in September, after the boards at both centers voted to approve the move. It came on the eve of changes brought about by federal health reform measures that will require insurance companies to cover substance abuse and mental health treatment—giving more people access to treatment.

The merger is expected to be completed by the end of the year, pending regulatory approval. The new entity, which will function under a combined board, will be named the Hazelden Betty Ford Foundation. The new organization will offer residential and outpatient services at 14 sites across the US, according to a joint news release. You can read more about the merger at www.hazelden.org.

More ED Visits for Alcohol-Related Diagnoses

Alcohol-related diagnoses are bringing more patients—both male and female—to hospital emergency departments (ED).

Continued on page 7

Substance Cravings and Addiction Relapse Continued from page 4

Psychologist Stephen Tiffany, PhD, a major figure in the field of craving research, has noted that the issue is messier than suggested by some studies (Tiffany ST and Wray JM, *Ann NY Acad Sci* 2012;1248:1–17). He suggests that cravings *per se* do not appear to predict prognosis and need to be considered in context. From his standpoint, the question isn't whether cravings predict drug use, but rather under what conditions, in which patients, do cravings contribute to relapse? This returns us to the whole business of Type 1 and Type 2 cravings, which are much more challenging to measure than simple thoughts and urges.

Four Clinical Recommendations

To my mind, cravings are too common and distressing to simply ignore. I recommend following these four steps to address cravings in your patients:

1. Ask patients with addiction about their cravings at *every* clinical encounter.
2. Strongly consider using validated ratings scales to measure those cravings. I suggest using a question or two from validated scales like PACS.
3. Pay close attention to patients whose scores are high and show little change over time. They probably

merit more careful clinical supervision and possibly prescription of anti-craving medications.

4. Further assess patients who report significant cravings for situationally-bound drivers (those “people, places, and things” that can lead to relapse) and negative affect. Many of these triggers can be modified or addressed through psychosocial interventions and various medications.

Research Updates

PTSD

Study Looks at Best Way to Treat PTSD and Alcohol Use Disorder

Alcohol dependence and posttraumatic stress disorder (PTSD) often co-occur and prove resistant to treatment. Treatment is complicated by concerns that prolonged exposure (PE) therapy—considered one of the most effective therapies to treat PTSD—may exacerbate alcohol use.

A recent randomized clinical trial (RCT) compared the effectiveness of using naltrexone (ReVia, Vivitrol) to treat alcohol dependence, combined with PE to treat PTSD. Researchers at the University of Pennsylvania and the Philadelphia Veterans Administration conducted a single-blinded RCT of 165 participants with both disorders.

Study participants were randomly assigned to either (1) PE plus 100 mg per day of naltrexone, (2) PE plus pill placebo, (3) supportive counseling plus naltrexone, or (4) supportive counseling plus pill placebo. PE took place over 12 weeks with 90-minute sessions, followed by six biweekly sessions. All participants received supportive counseling.

Researchers measured alcohol use, alcohol cravings, and PTSD symptom severity. They evaluated participants prior to treatment, after 24 weeks of treatment, and six months after discontinuation of treatment.

Participants in all four treatment groups had large reductions in drinking days, however, those who received naltrexone consumed alcohol less frequently than those who received placebo. When it came to treatment of PTSD, there was a similar reduction in symptoms in all four groups—a finding inconsistent with previous research demonstrating the superiority of PE. The authors said the results may reflect the fact that all study participants received supportive counseling, as well as the relatively low number of PE sessions received by participants.

Six months after the end of treatment, participants in all four groups had increased their alcohol use, but those in the PE-plus-naltrexone group had the smallest increases. That finding suggests that PE plus naltrexone may protect

patients with alcohol use disorder and PTSD from relapse after treatment is discontinued.

Researchers concluded that naltrexone decreases alcohol use and that PE is not associated with an exacerbation of alcohol use disorder. The latter finding contradicts the common view that trauma-focused therapy is contraindicated for individuals with both alcohol use disorder and PTSD because it may exacerbate PTSD symptoms and intensify alcohol use (Foa EB et al, *JAMA* 2013;310(5):488–495).

CATR's Take: This was a rare real-world study that treated addiction and a co-occurring mental disorder concurrently. PE was demonstrated to be safe in patients with addiction, which will hopefully encourage community-based clinicians to offer it to their clients. Although PE did not appear to offer benefit compared to supportive counseling, this was likely due to poor adherence to the PE protocol. Consistent with many prior clinical trials, naltrexone reduced heavy drinking and should be widely prescribed to patients with alcohol use disorder.

ALCOHOL

The Consequences of Mixing Alcohol and Energy Drinks

Many college students are mixing alcohol and energy drinks, as well as engaging in hazardous drinking, which puts them at risk for alcohol-related harm. But do the negative consequences that result from consuming alcohol with these energy drinks go beyond just alcohol alone?

Researchers at the Center for Addiction and Behavioral Health Research at the University of Wisconsin–Milwaukee posed that question. The study looked at a probability sample of 606 undergraduate students aged 18–25 at a large urban university. Investigators measured hazardous drinking and alcohol-related consequences during the past year. The latter included driving a car while under the influence, getting hurt or injured, experiencing unwanted sexual contact, and having unprotected sex.

About 75% of students reported using alcohol mixed with energy drinks in their lifetime; the prevalence was

65% in the past year. Students who mixed alcohol and energy drinks were more than twice as likely to have had unprotected sex compared to those who consumed alcohol alone (OR 2.35 [95% CI 1.27–4.32]). However, adding energy drinks to alcohol did not appear to increase the risk of driving while impaired, experiencing unwanted sexual contact, or other negative health outcomes.

Researchers concluded that mixing alcohol and energy drinks might confer additional risk for unprotected sex beyond hazardous drinking. This may have public health implications including the spread of sexually transmitted infections and unplanned pregnancy (Berger L et al, *Addict Behav* 2013;38(9):2428–2432).

CATR's Take: This study adds to a growing literature on risky behaviors and negative health consequences associated with alcohol mixed with energy drinks. Clinicians should specifically inquire about the use of these beverages as they may confer greater risk than the abusive use of alcohol alone.

FOOD ADDICTION

Want Some Fries With That?

The possibility that food can be addicting has been getting some serious attention in recent years (see for example Gearhardt AN et al, *J Addict Med* 2009;3(1):1–7). The idea isn't half-baked: food and other natural rewards, like sex, activate the same brain regions that are hijacked by drugs of abuse.

Researchers in Boston and Ulm, Germany, recently demonstrated a possible mechanism for food addiction. They focused on glycemic index (GI), which refers to how quickly blood sugar (glucose) increases after eating. Foods with a high GI raise blood glucose rapidly whereas low-GI foods burn more slowly.

Twelve overweight or obese men participated in a randomized, blinded, crossover study. Subjects consumed test meals that were similar in all respects (eg, appearance, taste, calories) except GI. Hunger was measured at baseline and at various time points after eating. Blood glucose was also assessed at intervals and

Continued on page 7

CE/CME Post-Test

To earn CE or CME credit, you must read the articles and log on to www.CarlatAddictionTreatment.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 November 30, 2014. 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. Author Terence T. Gorski recommends ongoing professional monitoring to help prevent client relapse with, at minimum, monthly visits for how long (Learning Objective #1)?
 a) Three months b) Five months c) Six months d) Nine months
2. Typically what percentage of people relapse following completion of addiction treatment (LO #2)?
 a) 10%–20% b) 25%–35% c) 40%–60% d) 65%–75%
3. A study at the Mayo Clinic that looked at the relationship between alcohol cravings and addiction relapse found a PACS score of less than seven on admission was the strongest predictor of successful treatment (LO #3)?
 a) True b) False
4. Researchers in Boston and Ulm, Germany, recently found which of the following type of meals created greater cerebral blood flow in the right nucleus accumbens, a key portion of the brain's reward circuitry (LO #4)?
 a) High-glycemic index (GI) meals b) Low-GI meals
 c) High fiber meals d) High fat meals
5. Researchers at the University of Pennsylvania and the Philadelphia Veterans Administration confirmed that trauma-focused therapy is contraindicated for individuals with alcohol dependence and PTSD, as it exacerbates symptoms of the disorder and leads to increased alcohol use (LO #4).
 a) True b) False

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News of Note

Continued from page 5

The Centers for Disease Control and Prevention (CDC) recently compared the rate of ED visits from 2001–2002 to those in 2009–2010 based on the National Hospital Ambulatory Medical Care Survey. The agency found the rate of visits for alcohol-related diagnoses for males increased 38%, from 64 to 94 visits per 10,000 population. Over the same period, the visit rate for females

also increased 38% from 26 to 36 visits per 10,000 population. Throughout the period, the visit rate for males was higher than the rate for females. For a graph demonstrating the increase go to <http://1.usa.gov/16ZWx5H>.

The data were reported in the "QuickStats" of the September 6 issue of the CDC's *Morbidity and Mortality Weekly Report*. The health toll created

by alcohol use, however, is likely much greater than indicated. The statistics did not include ED visits that could be attributed to alcohol use, such as falls, motor vehicle crashes, and other types of injuries/conditions.

Research Updates

Continued from page 6

functional MRI imaging was performed.

As expected, high-GI meals increased blood glucose more rapidly and to a higher peak than low-GI meals ($P < 0.01$). High-GI meals were also associated with a more rapid drop in blood glucose following the peak and lower blood glucose concentrations than low-GI meals starting about two hours after eating. High GI-meals reduced hunger less than low-GI meals immediately after eating and were associated with a greater degree of hunger over time ($P = 0.04$).

Cerebral blood flow (a surrogate for brain activity) was greater in the right nucleus accumbens, a key portion of the brain's reward circuitry, after eating high-GI meals compared to low-GI meals ($P < 0.01$). Investigators found that this brain activity was strongly associated with blood glucose and hunger (Lennerz BS et al, *Am J Clin Nutr* 2013;98(3):641–647).

CATR's Take: Although this study may give some credence to chocolate addiction and the sugar high, the authors urge appropriate caution. They note that

food, unlike most substances that are abused, is necessary for survival and that some people can eat high-GI foods on a chronic basis without apparent consequences. Nonetheless, it is provocative that certain foods ring up in a way very similar to addictive substances. It's something worth thinking about when your clients find their hands returning to a bag of potato chips or reaching for more M&Ms.

When treated as a chronic illness with proper use of contingencies, monitoring, and supports, you get upwards of 80% continuous recovery for five years.

CATR: Can you identify some small ways that clinicians could immediately identify or implement steps that would substantially improve long-term outcomes?

Dr. McLellan: If I were a physician dealing with any other chronic illness, I would routinely do screening for substance use disorders and brief intervention. Here's why: substance use disorders—not necessarily addiction, but medically harmful use—is as high as 50% in almost any adolescent clinical population, particularly with a psychiatric or behavioral health condition. It is very prevalent in trauma centers, emergency rooms, and particularly chronic pain management settings. Physicians can't manage the patient's illness without identifying and dealing with substance use disorders. When they are caught at an early age or early in their course, they are quite amenable to really modest levels of counseling and management.

CATR: Thank you, Dr. McLellan.

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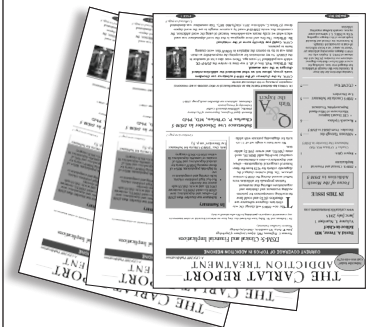
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