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## Why does the addiction treatment field continue to tolerate smoking instead of treating it?

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### Introduction

Treated addicts who never smoked, or quit smoking, have been found to recover faster and remain abstinent longer than those who continue smoking. There is growing epidemiological evidence that smoking cessation is associated with successful recovery (Lemon, Friedmann, & Stein, 2003), and clinical outcomes research shows improved recovery outcomes for those who quit smoking (Bobo, McIlvain, Lando, Walker, & Leed-Kelly, 1998; Burling, Marshall, & Seidner, 1991; Hurt et al., 1994; Martin et al., 1997; Prochaska, Delucchi, & Hall, 2004; Stuyt, 1997; Toneatto, Sobell, Sobell, & Kozlowski, 1995). Several studies have reported that a majority of clients entering addiction treatment want to quit smoking as well as cease using other drugs (See Knudsen, Boyd, & Studts, 2010), and yet, smoking cessation has not been widely implemented as a routine clinical intervention in addiction treatment. While this situation may reflect a lack of leadership by federal and state agencies, professional organizations, and funding and regulatory bodies (Coffman, et al. 2011; Muilenburg, Eby, & Conway, 2011), Brett Fuller and his colleagues (2007) found that smoking

cessation activities in addiction treatment are directly related to counselor attitudes about smoking and addiction. A better-informed addiction counselor workforce may well achieve what administrators and public health officials have been unable to do: integrate smoking cessation with addiction treatment.

This paper will briefly review the attitudes of addiction treatment clients, counselors, and administrators toward smoking, review health facts regarding smoking among persons experiencing or recovering from other substance use disorders, and examine smoking cessation through the growing understanding of the neuroscience of addiction. The paper will conclude with a discussion of what might be done to integrate the treatment of tobacco addiction within current addiction treatment.

### Client Smoking Rates and their Consequences

A recent review of 40 studies reported that between 70% and 90% of people entering addiction treatment are smokers (Guydish et al., 2011)—more than triple the 20.6% national smoking prevalence rate. Smoking rates appear to be particularly high

(about 90%) and smoking quit rates particularly low among methadone maintenance patients (Guydish et al., 2011; Okoli et al., 2010). Such findings are alarming. Tobacco use kills more Americans each year than alcohol and drugs combined (Degenhardt & Hall, 2010; U.S. Department of Health and Human Services, 2000), and persons discharged from addiction treatment are more likely to die of tobacco-related diseases than they are from the consequences of other drug use (See review in Richter, Ahluwalia, Mosier, Nazier, & Ahluwalia, 2002). Smokers die an average of 22 years sooner than nonsmokers (Neumark, Van Etten, & Anthony, 2000), and the quality of their last years is often severely compromised due to the effects of such conditions as lung and esophageal cancers, respiratory disorders, heart disease, and strokes.

### **Field Perceptions of Smoking and Recovery**

During the past three decades, studies have consistently reported addiction counselor fears that integrating nicotine addiction with treatment for other drugs would be anti-therapeutic (Bobo & Gilchrist, 1983; Bobo, Slade, & Hoffman, 1995; see also the review by Guydish et al., 2011). Some counselors and administrators have also viewed smoking as a therapeutic coping strategy that actually aids recovery from other addictions (Coffman et al., 2011; Walsh, Bowman, Tzelepis, & Lecathelinais, 2005). In a 2010 study of addiction counselor attitudes toward smoking and treatment outcomes, nearly 40% of those surveyed did not report a positive link between smoking cessation and client recovery outcomes (Knudsen & Studts, 2010). In a just-published study of 261 addiction counselors and 80 clinical supervisors, an improved rate of addiction recovery was not listed among the top 12 positive outcomes of smoking cessation (Eby, Sparks, Evans, & Selzer, 2012). More than 60% of counselors also report reservations about the effect a smoking ban might have on patient enrollment

(Muilenburg et al., 2011). Another barrier to integrating smoking cessation into addiction treatment may well be addiction counselors' own rate of nicotine addiction, which is higher than the national average (Rothrauff & Eby, 2011). Studies have consistently shown that smoking counselors are less likely to encourage smoking cessation among their clients (Bobo & Gilchrist, 1983). But attitudes toward smoking among counselors may be changing. In a recent national survey, only 8% of counselors opposed integrating smoking cessation with drug and alcohol treatment, while only 19% objected to the notion that tobacco cessation was as important to treat as other drugs (Muilenburg et al., 2011).

### **Research versus Practice**

Studies of clients entering addiction treatment consistently find that most clients want to stop smoking as well as stop alcohol and other drug use. Studies by Teater and Hammond (2010) as well as Toussaint, VanDeMark, Silverstein, and Stone (2009) found that most addiction treatment patients are interested in smoking cessation as well as achieving abstinence from illicit drugs. A meta-analysis study by Prochaska et al. (2004) found that smoking cessation during addiction treatment has no effect on rates of treatment retention or completion.

There is no scientific evidence that smoking is a helpful crutch in getting off or staying off alcohol and other drugs. The success of integrated smoking cessation and addiction treatment programs reviewed by Hall and Prochaska (2009) refutes the notion that smoking reduces post-detoxification cravings or emotional distress. A NIDA Clinical Trials Network study showed that integrated tobacco treatment did not interfere with drug treatment effectiveness, including for patients enrolled in agonist-assisted recovery (Reid et al., 2008). In fact, evidence is mounting that continued smoking retards the pace of recovery, and may actually be a significant factor in addiction relapse. Baca and Yahne (2009) reviewed smoking cessation studies between 1990 and 2008, and concluded that

data overwhelmingly showed that addiction treatment clients who never smoked or ceased smoking enjoyed longer recovery periods than those who continued to smoke.

Given the compelling evidence that smoking is neither healthy nor aids recovery from other addictions and the high tobacco-related mortality rates of those treated for other addictions, one might speculate that smoking cessation efforts would be rising. Alas, that does not seem to be the case. In fact, there is some evidence of backsliding. A 2011 report of a national study showed that nicotine replacement therapy was offered in 38% of addiction treatment programs, but after four years, the percentage had dropped to 34% (Knudsen & Studts, 2011). Earlier findings from this same study showed that only 19% of addiction counselors work in a setting in which there is a comprehensive ban on tobacco use (Knudsen et al., 2010). Another national survey found that 45% of addiction treatment facilities did not offer smoking cessation, that about the same percentage did not screen for smoking at intake, and that 38% still allowed clients to smoke in the facility (Vashisht et al., 2011).

### **Addiction Recovery and Smoking – What Neuroscience Research Is Telling Us**

The notion that smoking undermines recovery and that smoking is a central issue that should be addressed in addiction treatment is not new. More than 20 years ago, the late Bob Battjes, a NIDA public health officer, published an article in *Addictive Behaviors* calling for the integration of smoking cessation in alcohol and drug addiction treatment (Battjes, 1988). Five years later, a special issue of the *Journal of Substance Abuse Treatment* included 19 articles supporting the integration of smoking cessation within addiction treatment (Karan, 1993). David Kalman published a review in 1998 addressing smoking and recovery in *Substance Use & Misuse* citing numerous studies showing that integrated treatment is successful with no affect on retention in treatment. In the more than two decades

since those early calls for integrating smoking cessation with addiction treatment, the field has showed relatively little change (Knudsen, Studts, & Studts, 2012). Although integrated drug and alcohol treatment has moved from rarity to common practice, integration of tobacco cessation continues to elude widespread implementation.

All addiction involves overlapping brain systems (Koob & Le Moal, 2008). It is as illogical to treat alcohol and drug addiction while ignoring tobacco addiction as it would be to treat cocaine addiction while ignoring opiate addiction. There is growing evidence that nicotine dependence can undermine recovery from other drug addictions. At a molecular level, Li and Wang (2007) concluded that the protein profiles of smokers were indistinguishable from individuals addicted to alcohol and drugs. At the neuronal level, a 2010 review by Maldonado and Berrendero summarized an addictive cycle of electrochemical stimulation in the brain responsible for modulating the dopamine system. Their empirically derived model involves both the same cannabinoid and opioid receptors associated with opiate addiction, and shows the same reaction when the brain is exposed to nicotine as when exposed to other drugs. They even cite evidence that smoking-associated environmental cues interact with drug-associated cues to sustain addiction.

Eminent neuroscientists George Koob, editor of *Addiction Medicine*, and Nora Volkow, Director of the *National Institute on Drug Abuse*, have both individually and jointly published articles about how the brain's reward system uses dopamine and other neurotransmitters to create the vicious cycle that results in addiction. One brain study in particular is worth mentioning. Scott et al. (2007) found that smoking (nicotine) activated opioid receptors and stimulated dopamine neurotransmission in the human brain. That smoking increases vulnerability to relapse via dopamine is consistent with the popular Incentive-sensitization theory of alcohol and drug addiction in neuroscience (Gardner, Tapper, King, DiFranza, &

Ziedonis, 2009; Robinson & Berridge, 1993, 2001). Our key point here is that dopamine and related neurological systems seem to be the biological epicenter of all addictive processes. Thus, keeping that addictive neurological process of drug abstaining individuals stoked with addictive substances such as nicotine is self-defeating based on the fact that nicotine interferes with a return to normal dopamine functioning in the brain.

### **Addiction Recovery and Smoking – What Health Services Research Is Telling Us**

There is growing empirical evidence that smoking interferes with recovery (Patkar et al., 2003; Sullivan & Covey, 2002; Toneatto et al., 1995). A 2007 five-year follow-up with 598 drug and alcohol patients found that 53% were smoking at five-year follow-up. Those who smoked were less likely to be abstinent in the past 30 days and had higher Addiction Severity Index Scores than non-smokers (Satre, Kohn, & Weisner, 2007).

Neuroscience, treatment, and recovery outcomes research all provide compelling evidence that leaving any drug in the brain is likely to interfere with abstinence from all of them. Studies have shown that smoking cessation improves treatment outcomes for alcoholism (Bobo et al., 1998; Sobell, Sobell, & Kozlowski, 1995) and other drug addictions. A 2004 meta-analysis of 19 clinical trials concluded that smoking cessation during addiction treatment was associated with a 25% increase in rates of long-term recovery (Prochaska et al., 2004). The success of integrated programs reviewed by Hall and Prochaska (2009) also refutes the notion that smoking is a necessary crutch to help with post-detoxification craving. A NIDA Clinical Trials Network study showed that integrated tobacco treatment did not interfere with drug treatment effectiveness including clients enrolled in agonist-assisted recovery (Reid et al., 2008).

The belief of some counselors in the therapeutic effects of smoking during addiction recovery (as documented by Bobo & Gilchrist, 1983; Bobo et al., 1995; and Guydish et al., 2011) is simply not supported by scientific studies of smoking and recovery outcomes. Hall and Prochaska have systematically addressed those misconceptions in their 2009 review of the research literature and presented data to refute them. A second 2009 review by Baca and Yahne outlined numerous studies showing that nonsmoking addiction treatment clients enjoyed longer recovery periods for both alcohol and drugs than smokers. Studies in both the US and Europe included in these reviews confirm that integrating nicotine treatment with addiction and/or mental illness treatment does not increase dropouts or otherwise adversely affect treatment outcomes for comorbid conditions.

### **Addiction Treatment and Smoking Interventions**

Some counselors may be concerned that there are no effective treatments for nicotine addiction, but there is a mountain of research indicating the effectiveness of nicotine replacement therapy (NRT) for helping smokers stop, including smokers addicted to other drugs (Wu, Wilson, Dimoulas, & Mills, 2006). Most behavioral interventions have been shown to be effective in trials as well (Baca & Yahne, 2009), but these effects have been generally modest unless paired with NRT (Agboola, McNeil, Coleman, & Bee, 2010; Campbell, Krumenacker, & Stark, 1998). Nicotine replacement therapy seems to be the most popular approach currently used by addiction treatment providers (Knudsen & Studts, 2011); however, as in the case of illicit drug addiction treatments, there is a vast array of efficacious interventions for smoking cessation, and smokers need to be encouraged to persevere until they find one that works well for them (Ahmed & Hilton,

1982; Marlatt & Witkiewitz, 2005; Shiffman, 1993).

Fiore and Baker (2011) published a handy overview of cessation treatment in the *New England Journal of Medicine*. The article includes tables with step-by-step guidance for healthcare providers in their interaction with smokers, contains an easy-to-understand summary of cessation medications that includes doses and applications, and even offers a table of side effects of treatments. The 2009 Baca and Yahne article cited earlier is filled with advice aimed at helping addiction professionals integrate smoking cessation with addiction treatment.

The US Public Health service has a downloadable book in PDF form containing clinician guidelines for helping smokers quit. It is available through the Agency for Healthcare Research and Quality at <http://www.ahrq.gov/path/tobacco.htm>. The National Cancer Institute also sponsors [www.smokefree.gov](http://www.smokefree.gov), which contains online tools for smokers.

One tactic that makes sense when dealing with drug addicted clients is to exploit the intent to treat that motivated enrolling in a program to get drug free, and point out that nicotine, like heroin, cocaine, etc., is a highly addictive drug that may interfere with a client's ability to maintain illicit drug abstinence. Such discussions can be guided by easily understood explanations of the dopamine system such as the one available on the university of Texas website, <http://www.utexas.edu/research/asrec/dopamine.html>, or NIDA's website <http://m.drugabuse.gov/publications/teaching-packets/neurobiology-drug-addiction>.

## Concluding Remarks

This review has outlined scientific evidence challenging the contentions that smoking is a therapeutic aid in recovery from other addictions and that smokers entering addiction treatment do not want to quit smoking. Evidence was also presented that smoking cessation enhances long-term addiction recovery outcomes, that effective smoking cessation treatments currently

exist, and that such approaches can be effectively integrated into mainstream addiction treatment settings. What is lacking at this time is not science, but the will of leaders in the field to act on the available science. It is time, no past time, to integrate smoking cessation within addiction treatment. We call on all addiction professionals to step forward and assist with this critical milestone in the history of addiction treatment and recovery.

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