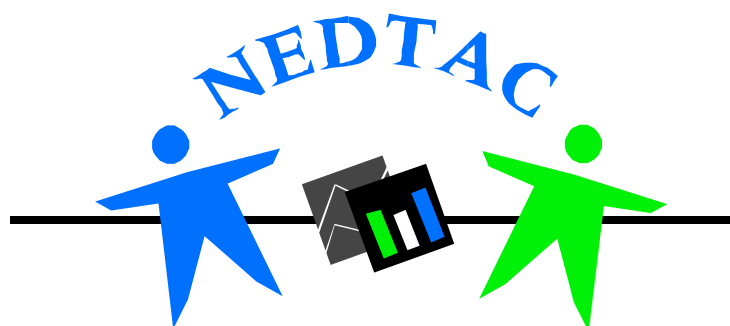


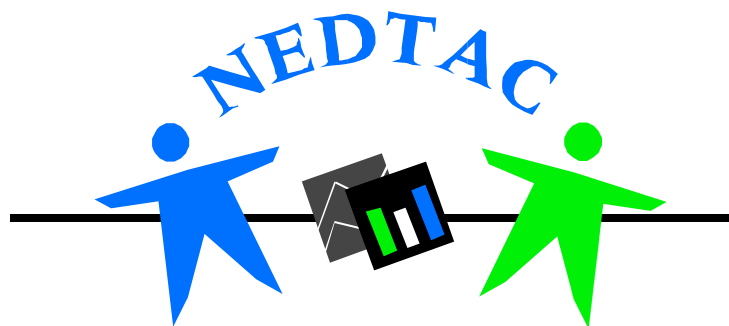
**NATIONAL EVALUATION DATA AND
TECHNICAL ASSISTANCE CENTER**



**PHARMACOLOGICAL TREATMENT AND
INTERVENTION FOR SUBSTANCE ABUSE: RESOURCES**

April 1999

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TABLE OF CONTENTS

	<u>Page</u>
FOREWORD	i
I. PHARMACOLOGICAL TREATMENT/INTERVENTION FOR SUBSTANCE ABUSE	1
II. ULTRA RAPID DETOXIFICATION WITH ANESTHESIA (UROD)	3
III. PHARMACOLOGICAL TREATMENT AND INTERVENTION FOR SUBSTANCE ABUSE: SELECTED BIBLIOGRAPHY	4
IV. SELECTED DRUGS USED FOR ALCOHOL AND SUBSTANCE ABUSE TREATMENT	11

FOREWORD

One of the missions of the Center for Substance Abuse Treatment is to enhance the nation's substance abuse treatment system by identifying, developing, and supporting appropriate policies, approaches, and programs. In short, for the field of substance abuse treatment, CSAT seeks to determine what works, for whom, how well, and at what cost.

Building knowledge through evaluation is the key to answering these questions. From CSAT's perspective, evaluation—including cost analysis and performance measurement—is an integral component of program management and part of an ongoing process of knowledge development, assessment, and improvement. Toward this end, CSAT's Program Evaluation Branch established the National Evaluation Data and Technical Assistance Center (NEDTAC) to advance state-of-the-art evaluation in the field of substance abuse treatment.

A primary NEDTAC activity was to provide evaluation technical assistance and support to substance abuse treatment providers and evaluators. To this end, NEDTAC produced a series of bibliographies in key topic areas. This document belongs to that series. This overview and annotated and selected bibliography lists books, articles, and research studies that focus on the use of pharmacological treatments for alcohol and drug abuse. We hope this document will assist professionals within the substance abuse treatment community to think about effective and appropriate ways to combine pharmacology with other treatments to broaden, enhance, and extend drug treatment outcomes and to increase their knowledge.

This bibliography, along with others in the series, was developed under the guidance and direction of the NEDTAC Government Project Officer, Ron Smith, Ph.D., Program Evaluation Branch, Office of Evaluation, Scientific Analysis, and Synthesis. We also wish to thank Tjinta May for compiling and Beth Archibald Tang for reviewing this document.

Sharon Bishop
Director
National Evaluation Data and
Technical Assistance Center (NEDTAC)

**I. PHARMACOLOGICAL TREATMENT/INTERVENTION
FOR SUBSTANCE ABUSE**

I. PHARMACOLOGICAL TREATMENT/INTERVENTION FOR SUBSTANCE ABUSE

Over the years, various pharmacological treatments have been used for alcohol and drug abuse. Some pharmacological treatments are used for relief of physiological withdrawal symptoms, while others are used for both physiological and pharmacological maintenance of a client at various stages of treatment. For instance, benzodiazepines are recommended for clients with serious alcohol withdrawal symptoms, disulfiram for more motivated clients, and naltrexone for alcohol dependence in general (Saitz and O'Malley, 1997). Some drugs that were originally used to treat alcoholism are now also being used for substance abuse treatment. Methadone, naltrexone, and disulfiram can be useful at different stages of both alcohol and drug addiction treatment (Brewer, 1996).

Pharmacological interactions for polysubstance abusers and addiction to the pharmacological "treatment" have always been concerns in the substance abuse field. Another concern is that clients and their families will seek out pharmacological treatments that have not been scientifically validated, but seem to promise overnight success with limited effort (see attached excerpt from the National Institute on Drug Abuse's report on Ultra Rapid Detoxification with Anesthesia, or UROD). In this context, clients and families may consider "rapid" pharmacological detoxification methods a replacement for the longer term substance abuse treatment. (See also Scherbaum et al., 1998; Cucchia, Monnat, Spagnoli, Ferrero, & Bertschy, 1998)

Depending on the client's drug(s) of abuse, level of abuse, and motivation, there are rationales for providing one or another pharmacological treatment. For example, methadone must be administered every day, while LAAM (1-alpha-acetyl-methadol) can be administered three times a week and requires fewer clinic visits. Unfortunately, methadone and LAAM can also become addictive. Buprenorphine, another pharmacological treatment being studied, has fewer side effects and is not likely to be as addictive as methadone or LAAM (Bowersox, 1995). Although naltrexone is not addictive, it is quickly absorbed and long lasting, "...close to being an ideal narcotic antagonist...", it cannot be used until the client's system is opioid-free (Ling and Wesson, 1990). In addition, because naltrexone does not produce a euphoric state, it is generally not effective for clients with little motivation to change substance-abusing behavior.

Because many pharmacological treatments are most effective when accompanied by psychosocial support, there has been an increase in recommendations to combine pharmacologic interventions with psychosocial treatment for substance abuse clients (Saitz and O'Malley, 1997;

O'Malley, 1995; McLellan et al., 1998; and McLellan, Arndt, Metzger, Woody, & O'Brien, 1993). In "Integrating Psychotherapy and Pharmacotherapy to Improve Drug Abuse Outcomes," Carroll (1997) discusses the differences between psychosocial and pharmacologic treatment and describes the weaknesses of methadone maintenance and naltrexone treatment in terms of final substance withdrawal and treatment retention. Carroll notes that while pharmacologic interventions and psychosocial treatments each have strengths and limitations, neither is "universally effective." She states that a combination of the most effective psychotherapy and pharmacotherapy would enhance and sustain drug treatment outcomes (see also Carroll, Nich, Ball, McCance, & Rounsaville, 1998).

NEDTAC reviews are for informational purposes only and should not be interpreted as an endorsement for the Center for Substance Abuse Treatment (CSAT) of any specific resource or publication.

II. ULTRA RAPID DETOXIFICATION WITH ANESTHESIA (UROD)

II. ULTRA RAPID DETOXIFICATION WITH ANESTHESIA (UROD)

The following is an excerpt from the NIDA Scientific Report of Ultra Rapid Detoxification with Anesthesia (UROD): Opinion of the Consultants and Criteria Relating to Evaluating the Safety and Efficacy of UROD by Barbara H. Herman, Ph.D., Director, Clinical Opioid Medications Program (COMP), Clinical Trials Branch (CTB), MDD, NIDA, NIH and Dorynne Czechowicz, M.D., Treatment Research Branch (TRB), DCSR, NIDA, NIH.

Based upon the available information, it is the opinion of selected experts in the U.S. who are prominent in the opiate addiction field, that the UROD anesthesia method is currently without ethical, medical, scientific, or financial justification as a clinical detoxification treatment at the present time based upon the following six criteria:

1. Risk: benefit ratio is unacceptable as a detoxification procedure.
2. Detoxification is not a cure for opiate addiction.
3. The expense and elaborate nature of UROD is not justified since there are several other less expensive and less elaborate detoxification methods.
4. Medication without psychosocial support has little impact on opiate addiction.
5. Only one double-blind study and few research reports systematically documenting the nature of the UROD treatment and its safety or efficacy for both immediate detoxification and longer-term relapse prevention.
6. No double-blind studies indicating that ultra short detoxification procedures are more successful in decreasing relapse to opiates than longer duration treatments.

NIDA will fax the complete article to you. Contact NIDA Press Officer, Mona W. Brown, in the Public Information Branch at (301) 443-6245. To contact the authors:

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**III. PHARMACOLOGICAL TREATMENT AND INTERVENTION FOR
SUBSTANCE ABUSE: SELECTED BIBLIOGRAPHY**

III. PHARMACOLOGICAL TREATMENT AND INTERVENTION FOR SUBSTANCE ABUSE: SELECTED BIBLIOGRAPHY

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**IV. SELECTED DRUGS USED FOR ALCOHOL
AND SUBSTANCE ABUSE TREATMENT**

IV. SELECTED DRUGS USED FOR ALCOHOL AND SUBSTANCE ABUSE TREATMENT

Drug	Treatment Level	Drug of Abuse	Pros/Cons	Reference
Benzodiazepines	Withdrawal	Alcohol	Effective for most serious alcohol withdrawal complications	Williams & McBride, 1998; Geissinger, 1998; Saitz & O'Malley, 1997
Beta-Blockers	Withdrawal	Alcohol	Ease withdrawal symptoms	Williams & McBride, 1998; Mayo-Smith, 1997; Brewer, 1995
Carbamazepine	Withdrawal	Alcohol	Ease withdrawal symptoms	Schneider, Dietrich, et al., 1998; Mayo-Smith, 1997
Clonidine	Withdrawal	Alcohol	Ease withdrawal symptoms	Williams & McBride, 1998; Mayo-Smith, 1997
Citalopram	Prevent relapse	Alcohol	Short-lived effects/not widely available	Angelone, Bellini, et al., 1998; Tiihonen, Ryyanen, et al., 1996; Amit, Brown, et al., 1985
Diazepam	Withdrawal	Alcohol	Effective for most serious alcohol withdrawal complications	Williams & McBride, 1998; Saitz & O'Malley, 1997
Disulfiram	Prevent relapse	Alcohol	Client must be alcohol-free; most effective with highly motivated clients	Brewer, 1996; Geissinger, 1998; Saitz & O'Malley, 1997
Fluvoxamine	Prevent relapse	Alcohol	Side effects	Angelone, Bellini, et al., 1998; Tiihonen, Ryyanen, et al., 1996; Kranzler, Del Boca, et al., 1992

Selected Drugs Used for Alcohol and Substance Abuse Treatment

Drug	Treatment Level	Drug of Abuse	Pros/Cons	Reference
Naltrexone	Alcohol dependence, prevent relapse	Alcohol	No negative reaction to alcohol; also blocks opiate effects/May cause liver cell damage	O'Malley, Jaffe, et al., 1992; Volpicelli, Alterman, et al., 1992; Geissinger, 1998; Saitz & O'Malley, 1997
Neuroleptics	Withdrawal	Alcohol	Most effective as supplement therapy	Mayo-Smith, 1997
Zimelidine	Prevent relapse	Alcohol	Short-lived effects	Amit, Brown, et al., 1985; Naranjo, Seller, et al., 1986
Buprenorphine	Dependence/ addiction, prevent relapse	Opiates, cocaine	Fewer withdrawal effects/ Abuse possible	Johnson, Jaffe, & Fudala, 1992; Kosten, Morgan, & Kleber, 1992; Mendelson & Mello, 1992; San, Torrens, et al., 1993; Ling, Rawson, & Compton, 1994; Schuh, Walsh, et al., 1996
	Detoxification	Heroin	Not approved by FDA	
Clonidine	Detoxification	Opiates	Not addictive	Ling & Wesson, 1990
	Withdrawal	Heroin		Center for Substance Abuse Treatment, 1995
Disulfiram	Addiction	Opiates, heroin		Brewer, 1996

Selected Drugs Used for Alcohol and Substance Abuse Treatment

Drug	Treatment Level	Drug of Abuse	Pros/Cons	Reference
Levomethadyl (LAAM)	Prevent relapse	Opiates	Long lasting; not a potent opiate; fewer clinic visits required/ Abuse possible	Ling & Wesson, 1990; Center for Substance Abuse Treatment, 1995; Ling, Rawson, & Compton, 1994
	Detoxification	Heroin	Not approved by FDA	
Methadone	Maintenance and detoxification; long-term treatment	Opiates	Reduce cravings; long lasting/ Abuse possible	Johnson, Jaffe, & Fudala, 1992; Ling & Wesson, 1990; Ling, Rawson, & Compton, 1994
Naltrexone	Prevent relapse	Opiates, heroin	Most effective with highly motivated clients; long lasting; not addictive	Johnson, Jaffe, & Fudala, 1992; Ling & Wesson, 1990
	Treatment	Opiates		Kosten, Morgan, & Kleber, 1992
Naloxone	Addiction; overdose	Opiates	Reduce misuse of buprenorphine/ Short-acting; longer observation required; opiate withdrawal symptoms	Mendelson & Mello, 1992; Ling & Wesson, 1990; Schuh, Walsh, et al., 1996; Mendelson, Jones, et al., 1997
Phenobarbital	Detoxification	Poly substance	Suppress withdrawal	Ravi, Maany, et al., 1990; Wolff, Hay, et al., 1993

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