Viewing Time

The program will take up to one hour to complete.

Target Audience

This program is designed for primary care physicians.

Other health care professionals working with patients and their families may also find this program of interest.

Faculty Disclosure

It is the policy of Children's Hospitals and Clinics of Minnesota to ensure balance, independence, objectivity, and scientific rigor in all its educational programs. Our faculty have been asked to disclose to our program audience any real or apparent conflicts of interest related to the content of their presentation. They have also been requested to let you know when any product mentioned in their presentation is not labeled for the use under discussion or is still under investigation.

Faculty Disclosure

David Frenz, MD has disclosed no actual or potential conflict of interest in relation to this educational activity.

During this educational activity **Dr. Frenz** will not be discussing the use of any commercial or investigational product not approved for any purpose by the FDA.

Adolescent Addiction: Diagnosis and Treatment

David Frenz, MD

Medical Director, Addiction Medicine,
HealthEast Care System, St. Paul, Minnesota

Adolescent Addiction: Diagnosis and Treatment

A lecture about the diagnosis and treatment of drug and alcohol addictions.

Program Objectives

Upon completion of this program, participants should be able to:

- Understand the diagnosis of addiction and other substance-related disorders
- Understand the general structure of the American Society of Addiction Medicine's Patient Placement Criteria
- Understand the Transtheoretical Model, its Stages of Change and some barriers encountered in Precontemplators
- Understand the medications available to treat addiction, including the various limitations associated with their possible use in adolescents

Disclaimer

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Accreditation

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Receiving CME Credit

To receive CME credit you must view the entire program and complete the evaluation form at the end.

Adolescent Addiction

David A. Frenz, M.D.
HealthEast Behavioral Care
St. Joseph's Hospital
St. Paul, Minnesota

Disclosures

- I am employed by the HealthEast Care System
- I do not have any financial relationships with the pharmaceutical or medical device industries
- I do not intend to discuss investigational drugs or the "off label" use of medications

Addiction

"A primary, chronic, neurobiologic disease, with genetic, psychological, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, continued use despite harm, and craving."

Principles of addiction medicine, 3d ed, 2003, page 1601.

Addiction

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Principles of addiction medicine, 3d ed, 2003, page 1601.

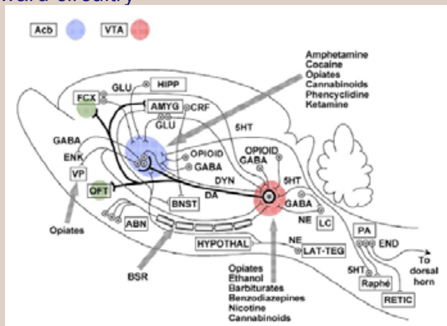
Brain disease

- Primary, meaning not due to something else
  - Something is intrinsically wrong with the brain
- Chronic, meaning it is never really cured
  - Tends to be relapsing-remitting (comes and goes)
  - Chronic disease paradigm is more appropriate for management

The fundamental problem

- The brain contains many circuits, including something called the reward-antireward system
- Addiction involves a disruption in this system
- You chronically feel bad and compulsively use drugs to feel good

Reward circuitry



Pharmacol Ther 2005;108:18.

Neurotransmitters

Dopamine
Endogenous opioids (e.g., dynorphin)
Gamma-aminobutyric acid (GABA)
Glutamate
Norepinephrine
Corticotropin-releasing factor (CRF)
Serotonin
Neuropeptide Y

Koob GF, Le Moal M. Annu Rev Psychol 2008;59:29.

Emotional climate and weather

- Our emotional "climate" is usually regulated within certain limits that we find comfortable or at least tolerable
  - Hedonic tone
- This climate is controlled by the interplay of opposing systems in our brain that respond to changes in the "weather"
  - Reward-antireward system

Koob GF, Le Moal M. Annu Rev Psychol 2008;59:29.

Hedonic tone

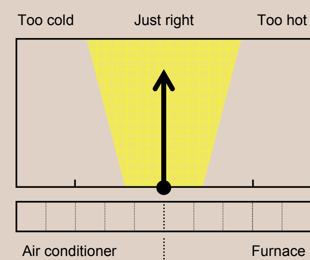
" The degree of pleasantness or unpleasantness associated with an experience or state… that can range from extreme pleasure to extreme pain "

Oxford English Dictionary.

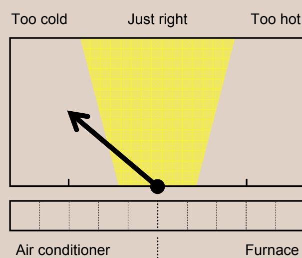
Reward-antireward system

- Reward system
  - Helps us feel good
- Antireward system
  - Helps us feel bad (in a good way)

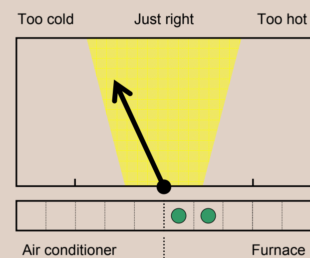
Autumn

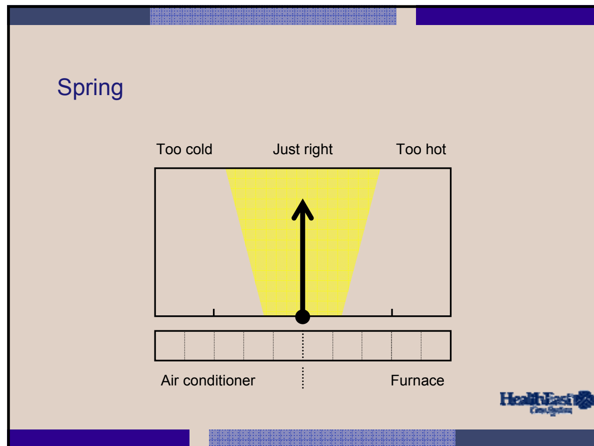


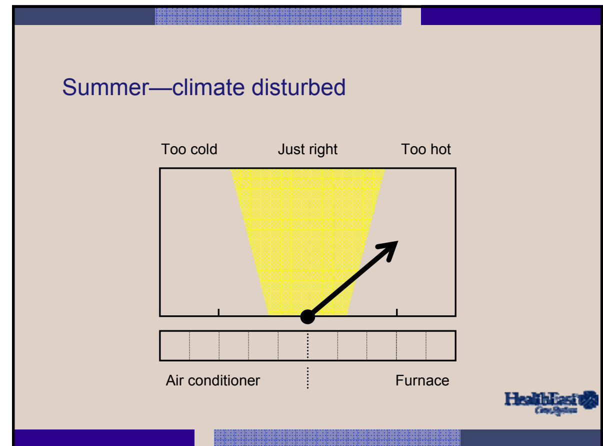
Winter—climate disturbed

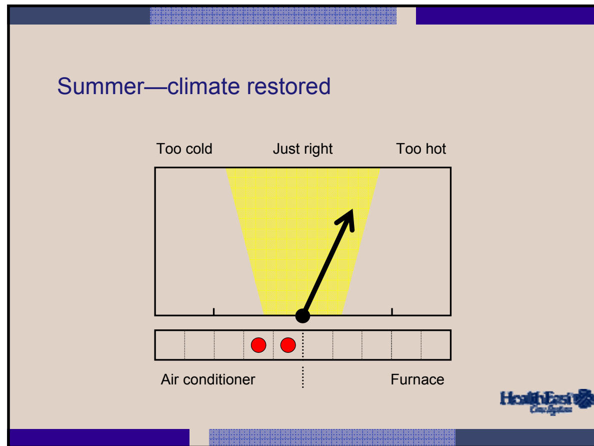


Winter—climate restored




Spring
Too cold
Just right
Too hot
Air conditioner
Furnace


Summer—climate disturbed
Too cold
Just right
Too hot
Air conditioner
Furnace


Summer—climate restored
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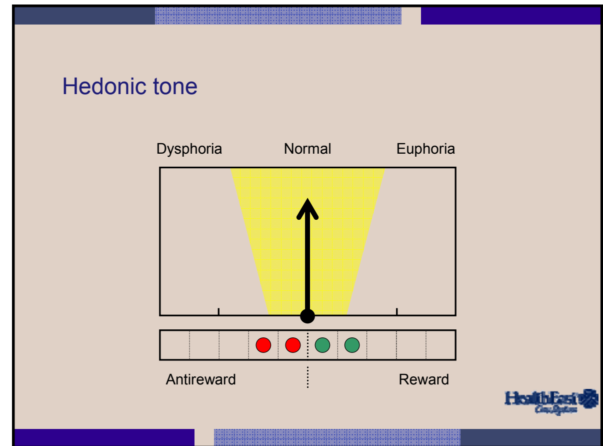
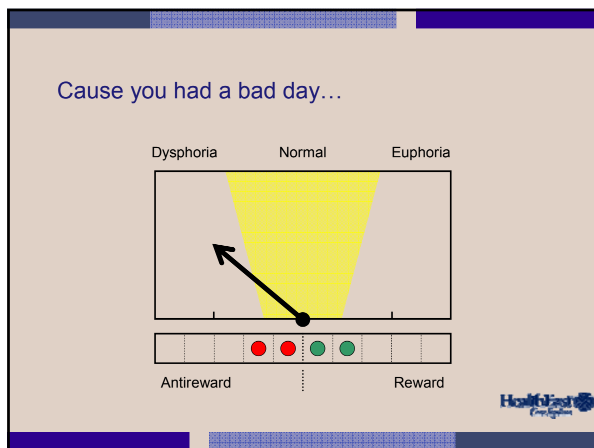
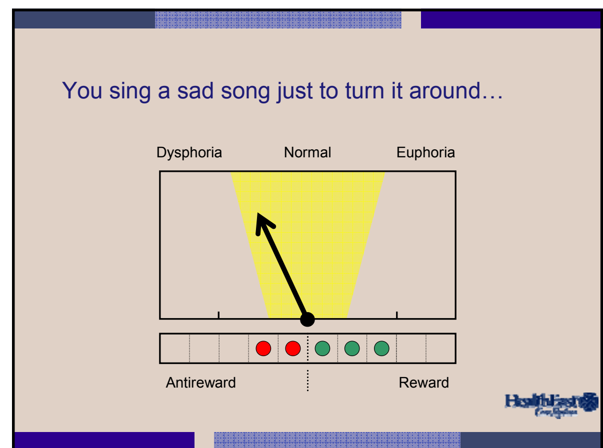
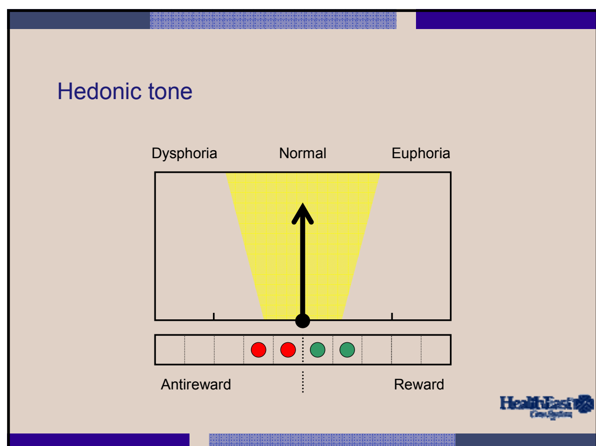
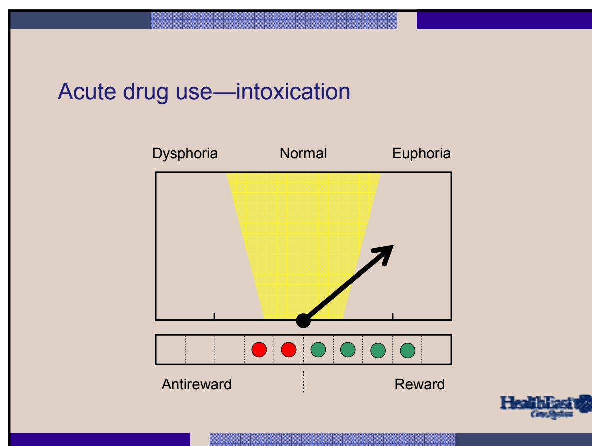
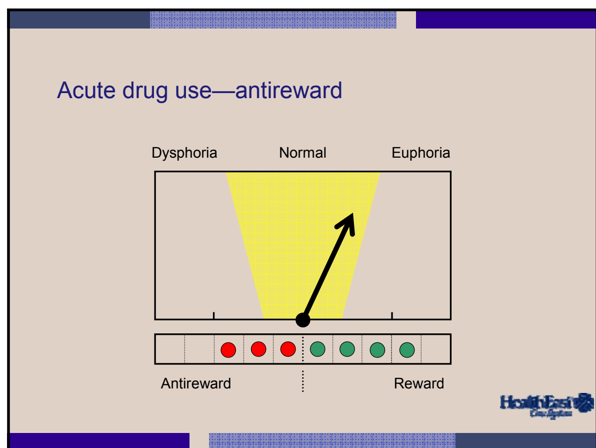

Hedonic tone
Dysphoria
Normal
Euphoria
Antireward
Reward

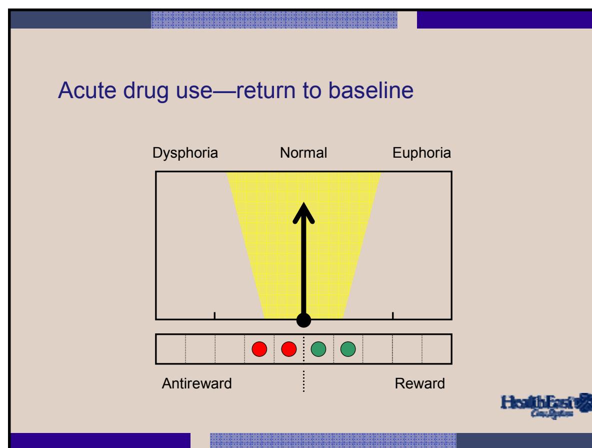

Cause you had a bad day…
Dysphoria
Normal
Euphoria
Antireward
Reward

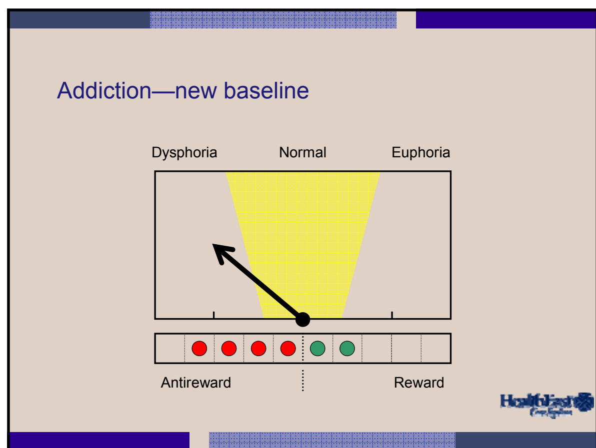

You sing a sad song just to turn it around…
Dysphoria
Normal
Euphoria
Antireward
Reward

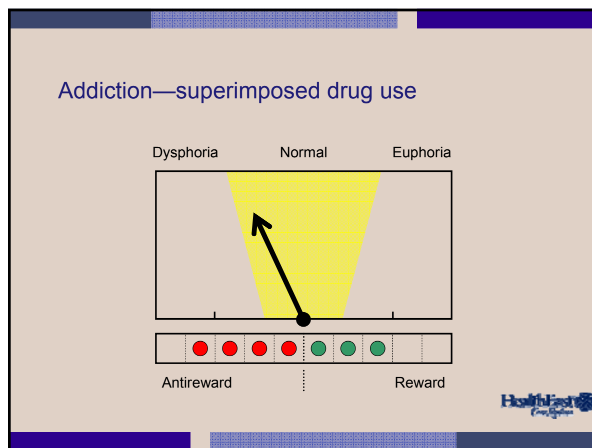

Hedonic tone
Dysphoria
Normal
Euphoria
Antireward
Reward


Acute drug use—intoxication
Dysphoria
Normal
Euphoria
Antireward
Reward

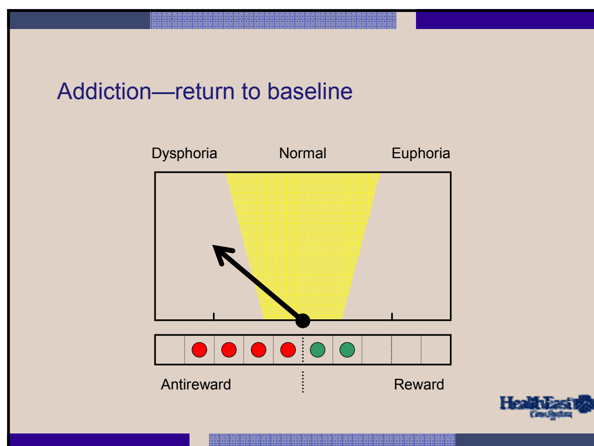

Acute drug use—antireward
Dysphoria
Normal
Euphoria
Antireward
Reward


Acute drug use—return to baseline
Dysphoria
Normal
Euphoria
Antireward
Reward


Addiction—new baseline
Dysphoria
Normal
Euphoria
Antireward
Reward


Addiction—superimposed drug use
Dysphoria
Normal
Euphoria
Antireward
Reward

Addiction—return to baseline



Addiction

" A primary, chronic, neurobiologic disease, with genetic, psychological, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, continued use despite harm, and craving. "

Principles of addiction medicine, 3d ed, 2003, page 1601.

The perfect storm

Host Genetic predisposition; dysfunctional, multiproblem families; comorbid psychiatric disorders
Agent Availability; cost; how fast it reaches the brain; efficacy as a tranquilizer
Environment Occupation; peer group; culture, social instability

Principles of addiction medicine, 3d ed, 2003, page 4ff.

Addiction

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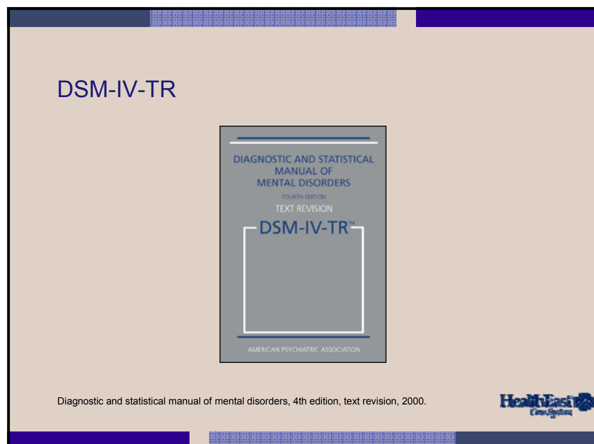
Principles of addiction medicine, 3d ed, 2003, page 1601.

Diagnosis

- Addiction is diagnosed based on behaviors, either reported by the patient or observed by others
  - Parents
  - Peers
  - Teachers and school administrators
  - Legal system
  - Physicians

In a nutshell

- Continuing compulsive substance use despite harm



Differential diagnosis

- Substance use disorders
  - Dependence
  - Abuse
- Substance-induced disorders
  - Intoxication
  - Withdrawal
  - Other

Substance use disorders

Dependence	Abuse
Tolerance	Role obligations
Withdrawal	Hazardous situations
Larger, longer	Legal problems
Cut down, control	Social or interpersonal problems
Time	
Activities reduced	
Health problems	

Dependence requires ≥ 3 criteria; Abuse requires ≥ 1 criterion.

Substance-induced disorders

- Intoxication
- Withdrawal
- Substance-related disorders

Substance-related disorders

- Diagnostic orphans
- Problem substance use
- Risky substance use
- Chemical coping

Other mental disorders

- Mood and anxiety disorders
- Disruptive behavior disorders
- Personality disorders, especially Cluster B

Borderline personality disorder

- Criterion 4: Impulsivity
  - Substance abuse
- Criterion 6: Affective instability
  - Intense episodic dysphoria, irritability or anxiety

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Big Book insights

" Men and women drink essentially because they like the effect produced by alcohol. The sensation is so elusive that, while they admit it is injurious, they cannot after a time differentiate the true from the false. To them, their alcoholic life seems the only normal one. "

Alcoholics Anonymous ("Big Book"), 3rd ed (7th imp), 1980, page xxvi.

Big Book insights

" They are restless, irritable and discontented, unless they can again experience the sense of ease and comfort which comes at once by taking a few drinks… After they have succumbed to the desire again, as so many do, and the phenomenon of craving develops… "

Alcoholics Anonymous ("Big Book"), 3rd ed (7th imp), 1980, page xxvi.

Craving

" Memory of the rewarding aspects of drug use superimposed on a negative emotional state "

Koob GF, Le Moal M. Annu Rev Psychol 2008;59:29.

Cravings

Positive Desire to get intoxicated or "high"	**Type 1** Induced by drugs or stimuli that have been paired with prior drug use
Negative Desire to relieve uncomfortable emotional symptoms	**Type 2** Negative emotional state, combined with Type 1, that causes drug seeking

Collins GB. Cleve Clin J Med 2006;73:641 § Koob GF, Le Moal M. Annu Rev Psychol 2008;59:29.

Cravings

Positive Desire to get intoxicated or "high"	**Type 1** People, places and things
Negative Restless, irritable and discontended	**Type 2** Restless, irritable and discontended

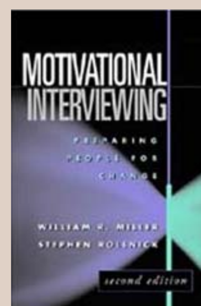
Substance abuse treatment

- Medically supervised withdrawal ("detoxification")
- Nurture readiness to change
- Create a sober recovery environment to assist with behavioral change
  - Type 1 cravings
- Medications to address distressing emotional symptoms that lead to relapse
  - Type 2 or negative cravings

Motivational interviewing

" A client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence. "

Motivational Interviewing, 2nd ed, 2002, page 25.



Miller WR, Rollnick S. Guilford Press, 2002.

Addiction pharmacotherapy

Substance	FDA-approved agents	Pediatric
Alcohol	Acamprosate (Campral)	No
	Disulfiram (Antabuse)	No
	Naltrexone (ReVia, Vivitrol)	No
Nicotine	Bupropion (Zyban)	No
	Nicotine (Nicorette and others)	No
	Varenicline (Chantix)	No

Pediatric = FDA-approved for use in pediatric patients.

Addiction pharmacotherapy

Substance	FDA-approved agents	Pediatric
Opioid	Buprenorphine	≥ 16 yo
	Methadone	No
	Naltrexone (ReVia)	No

Pediatric = FDA-approved for use in pediatric patients.

Big Book insights

" It helped me a great deal to become convinced that alcoholism was a disease, not a moral issue; that I had been drinking as a result of a compulsion, even though I had not been aware of the compulsion at the time; and that sobriety was not a matter of willpower. "

Alcoholics Anonymous ("Big Book"), 3rd ed (7th imp), 1980, page 448.

Comments

and

Questions

Thanks for viewing this presentation!

To receive CME credit, please click the CME Eval button below and complete the form.

HealthEast Care System

Addiction—A Brief Primer

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Big Book Insights:

" Men and women drink essentially because they like the effect produced by alcohol. The sensation is so elusive that, while they admit it is injurious, they cannot after a time differentiate the true from the false. To them, their alcohol life seems the only normal one. They are restless, irritable and discontented, unless they can again experience the sense of ease and comfort which comes at once by taking a few drinks… " [*1*]

" It helped me a great deal to become convinced that alcoholism was a disease, not a moral issue; that I had been drinking as a result of a compulsion, even though I had not been aware of the compulsion at the time; and that sobriety was not a matter of willpower. " [*2*]

Addiction—Definition:

" A primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving. " [*3*]

Cravings—Some Definitions:

Positive Cravings Desire for reward (intoxication, "buzz", "high") or other pleasurable psychological benefit	**Type 1 Cravings** Induced by drugs or stimuli that have been paired with prior drug use ("people, places, things")
Negative Cravings Desire to relieve uncomfortable emotional symptoms ("restless, irritable, discontented")	**Type 2 Cravings** Negative emotional state, combined with Type 1 Cravings, that causes drug seeking

Adapted from References 4 and 5

Addiction—Differential Diagnosis:

Differential considerations	Defined as
Substance dependence	• As per DSM-IV-TR*
Substance abuse	• As per DSM-IV-TR
Substance intoxication	• As per DSM-IV-TR
Substance withdrawal	• As per DSM-IV-TR
Substance-related disorder: diagnostic orphans	• Fulfill some but not full criteria for substance dependence or abuse
Substance-related disorder: problem substance use	• Substance-related health consequences • Does not fulfill full or partial criteria for substance dependence or abuse
Substance-related disorder: risky substance use	• Substance use in excess of what is considered healthy but in the absence of physical harm • Does not fulfill full or partial criteria for substance dependence or abuse
Substance-related disorder: aberrant-medication taking behaviors	• Taking a medication in a manner that is not prescribed • May signify another diagnosis appearing in this table
Substance-related disorder: chemical coping	• Taking a substance inappropriately to obtain psychological benefit
Substance-related disorder: medication diversion	• Obtaining medications under false pretenses to share with or sell them to others
Substance-related disorder: opioid pseudoaddiction	• Behaviors that resemble addiction but are secondary to under-managed pain
Substance-related disorder: opioid hyperalgesia syndrome	• Pain that increases in severity and/or changes in character despite escalating doses of opioids
Substance-related disorder: substance discontinuation syndrome	• Symptoms and/or signs that occur after a substance is discontinued or tapered§ • Does not fulfill criteria for substance withdrawal
Other mental disorders associated with substance use	• Mood and anxiety disorders† • Disruptive behavior disorders‡ • Personality disorders, especially Cluster B¶

Adapted from References 6–12
* DSM-IV-TR = Diagnostic and Statistical Manual of Mental Disorders, 4th ed, Text Revision
§ Examples include veisalgia (alcohol "hangover"), antidepressant discontinuation syndrome, various neonatal abstinence syndromes, et cetera
† See, for example, Criterion 7 for Manic Episode
‡ Consider, for example, "Serious violation of rules" for Conduct Disorder
¶ See, for example, Criterion 4 for Borderline Personality Disorder

Substance Dependence—Criteria Set:

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

Tolerance
Withdrawal
Impaired Control • Substance is often taken in larger amounts or over a longer period than was intended • There is a persistent desire or unsuccessful efforts to cut down or control substance use • A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects • Important social, occupational, or recreational activities are given up or reduced because of substance use • Substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance

Adapted from DSM-IV-TR [*13*]

Substance Abuse—Criteria Set:

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

Role Obligations Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home
Hazardous Use Recurrent substance use in situations in which it is physically hazardous
Legal Problems Recurrent substance-related legal problems
Social or Interpersonal Problems Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance

And the symptoms have never met the criteria for Substance Dependence for this class of substance [*14*]

Substance Abuse Treatment—General Approach:

Substance abuse treatment occurs per the American Society of Addiction Medicine's framework; in brief, a patient's clinical condition and needs are assessed in multiple domains (Dimensions of Care); the patient is then placed in an appropriate treatment environment (Level of Care) per their multidimensional profile [*15*]

Dimensions of Care:

Dimension	Defined as
1	Acute intoxication and/or withdrawal potential
2	Biomedical conditions and complications
3	Emotional, behavioral or cognitive conditions and complications
4	Readiness to change
5	Relapse, continued use or continued problem potential
6	Recovery/living environment

Levels of Care:

Level	Defined as
0.5	Early intervention
I	Outpatient treatment
II	Intensive outpatient treatment or partial hospitalization
III	Residential or inpatient treatment
IV	Medically managed intensive inpatient treatment
OMT	Opioid maintenance therapy

Dimensions of Care—Contrasted with Other Charting Formats:

Dimension	DSM-IV-TR	Standard Medical Documentation
1	Axis I	—
2	Axis III	Past medical history
3	Axes I and II	—
4	—	—
5	Axis V	—
6	Axis IV	Social history

Transtheoretical Model—Stages of Change:

Stage	Defined as
Precontemplation	Not currently considering behavioral change
Contemplation	Serious evaluation of considerations for or against change
Preparation	Planning for and commitment to change
Action	Specific behavioral changes are attempted or made
Maintenance	Work to maintain and sustain long-term change

As per DiClemente and Velasquez [*16*]

Precontemplative Resistance to Change:

" It can be helpful to think about precontemplators' resistance to change in what can best be summarized as the four R's: reluctance, rebellion, resignation, and rationalization. Each of these patterns of thinking, feeling, and reasoning helps keep precontemplators not ready to change. Almost all precontemplators use a combination of these patterns… " [*16*]

Motivational Enhancement Therapy—Definition:

" We define motivational interviewing as a client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence." [*17*]

Motivational Interviewing—General Principles:

Principle 1: Express Empathy	**Principle 2: Develop Discrepancy**
• Acceptance facilitates change • Skillful reflective listening is fundamental •Ambivalence is normal	• The patient rather than the provider should present the arguments for change • Change is motivated by a perceived discrepancy between present behavior and important goals or values
Principle 3: Roll with Resistance • Avoid arguing for change • Resistance is not directly opposed • New perspectives are invited but not imposed • The patient is a primary resource in finding answers and solutions • Resistance is a signal to respond differently	**Principle 4: Support Self-efficacy** • A patients's belief in the possibility of change is an important motivator • The patient, not the provider, is responsible for choosing and carrying out change • The provider's own belief in the patient's ability to change becomes a self-fulfilling prophecy

Adapted from Miller and Rollnick [*18*]

Motivational Interviewing—Patient Profiles:

Low Importance | Low Confidence • Desire to change is low • Perceived ability to make change is low	**Low Importance | High Confidence** • Desire to change is low • Perceived ability to make change is high
High Importance | Low Confidence • Desire to change is high • Perceived ability to make change is low	**High Importance | High Confidence** • Desire to change is high • Perceived ability to make change is high

Adapted from Miller and Rollnick [*19*]

Addiction Pharmacotherapy:

Diagnosis	**FDA-approved Treatment Options**
Alcohol dependence	Acamprosate (Campral) Disulfiram (Antabuse) Naltrexone (ReVia, Vivitrol)
Amphetamine dependence	None*
Benzodiazepine dependence	None*
Cannabis dependence	None*
Cocaine dependence	None*
Nicotine dependence	Bupropion (Zyban) Nicotine (Nicorette and others) Varenicline (Chantix)
Opioid dependence	Buprenorphine (Subutex, Suboxone) Methadone (Dolophine)

Medications support but do not replace standard psychosocial supports (e.g., substance abuse treatment, mutual help meetings, peer sponsorship)

* Consider an addiction medicine consultation to comment on possible unapproved (“off label”) therapies

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13. DSM-IV-TR, page 197.
14. DSM-IV-TR, page 199.
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17. Motivational Interviewing, page 25.
18. Motivational Interviewing, page 33ff.
19. Motivational Interviewing, page 54.

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February 2009