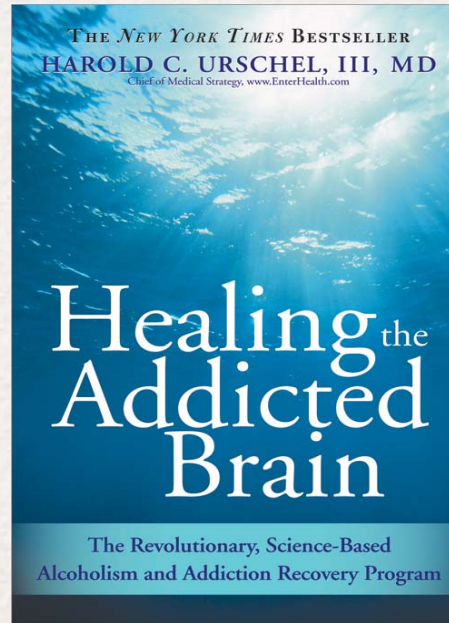


Healing the Addicted Brain

Innovative Addiction Support and Treatment



Harold C. Urschel III MD, MMA
Chief Medical Strategist - Enterhealth

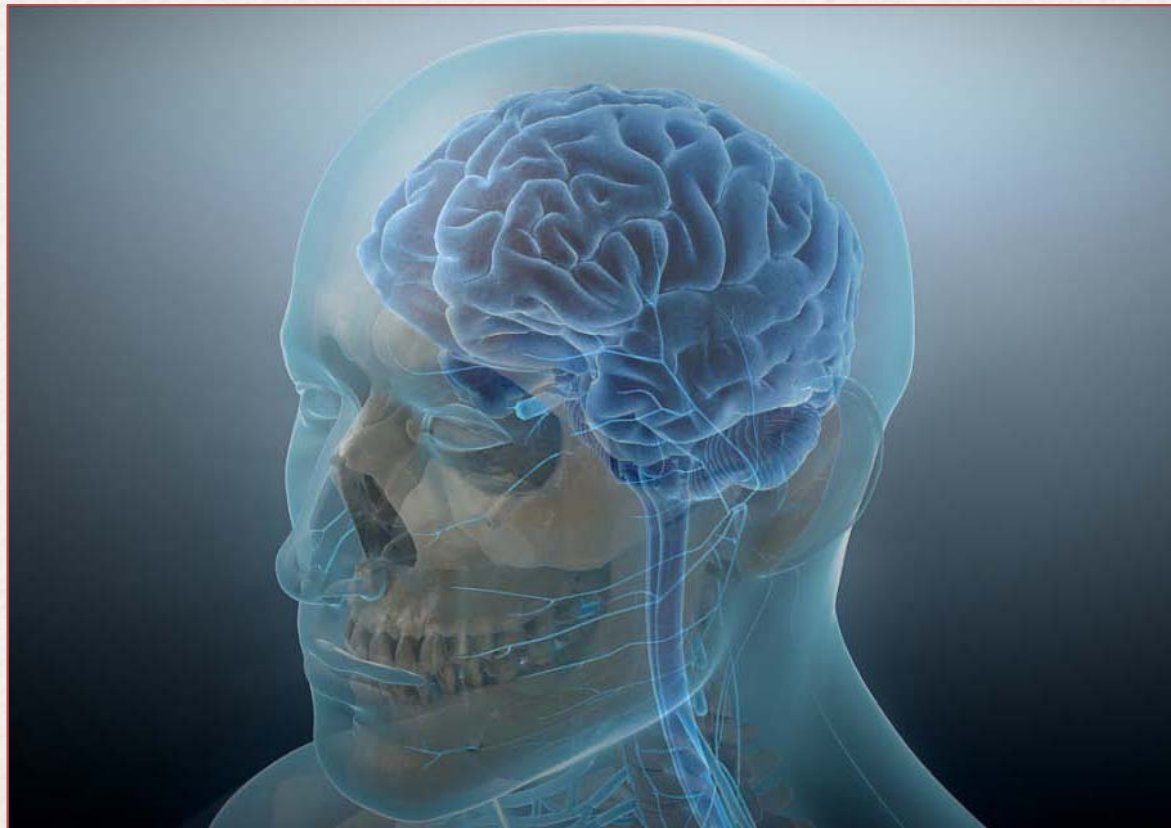
- Author of *The New York Times* best seller, Healing the Addicted Brain
- Board certified in addiction and general psychiatry by the American Board of Medical Specialties
- Published work in the areas of opiate dependence, alcohol dependence, cocaine dependence and anti-addiction medications
- Education:
 - Cum Laude with a Bachelor of Arts in Neuropsychology from Princeton University
 - Doctorate of Medicine degree from the University of Texas Southwestern Medical School
 - Clinical research fellowship at the University of Pennsylvania/Veteran's Administration Medical Center
 - Masters of Management Administration degree from Stanford University Graduate School of Business

- Enterhealth is a premier addiction disease management company in Dallas, TX.
 - Operates Residential and Outpatient treatment facilities
 - Board Certified doctors, psychiatrists and therapists specializing in addiction treatments are on-site 24 hours-a-day
 - Round-the-clock, specially trained nurses
 - Withdrawal Stabilization (detox) capabilities
 - Neurological testing and treatments
 - Anti-addiction medications
 - Dual diagnosis
- Mission: To deliver a *Continuum of Care* using the latest scientific protocols and medical breakthroughs to block the effects of alcohol and drugs, lessen the affects of withdrawal, and decrease cravings so that the brain's neurological pathways have a chance to heal.

- The Science of Alcohol and Drug Addiction
- Leading drug classes of abuse
 - Alcohol, Marijuana & Opiates
- Anti-Addiction Medication Breakthroughs
- Science-Based Treatment
- Wrap up/Q&A



Addiction is a Brain Disease



Why has drug and alcohol abuse been labeled as a chronic medical disease?

Think of addiction like another disease, cancer:

- It is deadly if you get it and do not get treated
- If you do get proper treatment, it could still come back
- It is similar to other diseases (Asthma, Diabetes, High Blood Pressure) that have to be managed throughout our lives

The Brain Cell (Neuron)

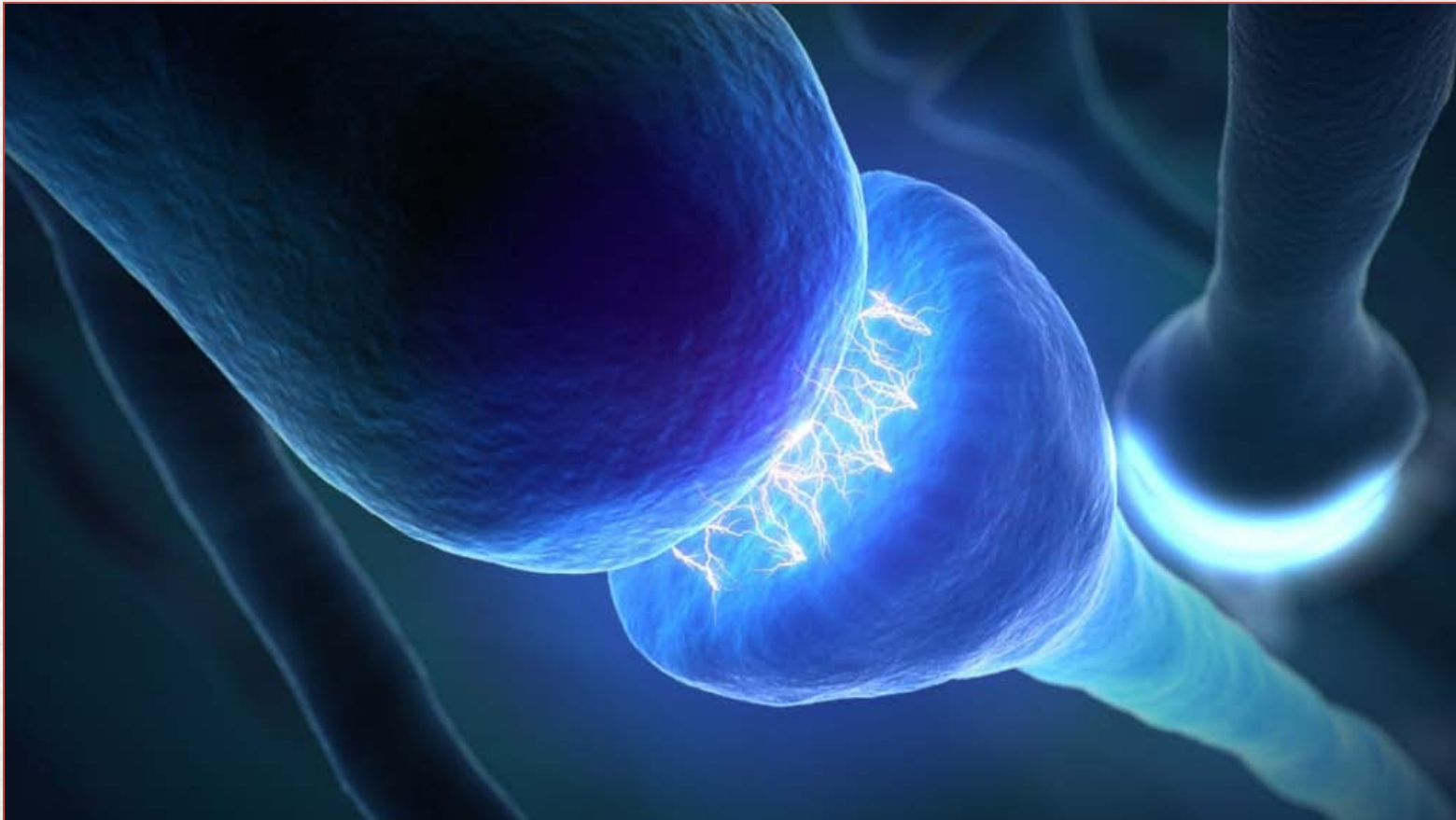
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Reference

National Institute of Drug Abuse. Drugs, brains, and behavior. The science of addiction. National Institutes of Health. NIH Pub No. 10-5605. Available at: <http://www.drugabuse.gov/scienceofaddiction/sciofaddiction.pdf>. Last updated August 2010.

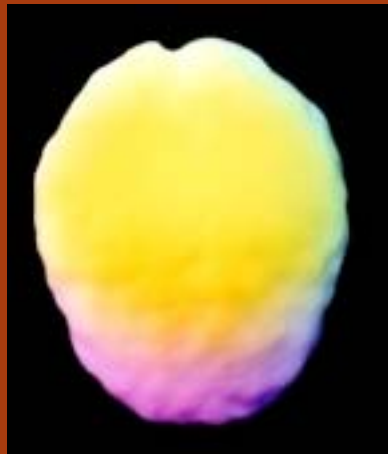


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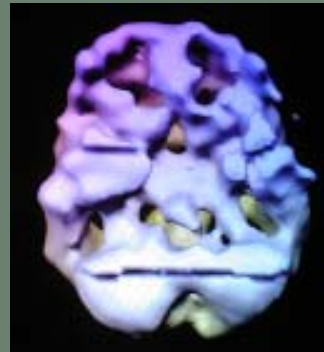
National Institute of Drug Abuse. Drugs, brains, and behavior. The science of addiction. National Institutes of Health. NIH Pub No. 10-5605. Available at: <http://www.drugabuse.gov/scienceofaddiction/sciofaddiction.pdf>. Last updated August 2010.

- Research shows that alcohol and drug abuse causes a significant negative impact to the memory center of the brain
- Using drugs and alcohol disrupts the brain in unhealthy ways, making it harder to cope with social situations and the normal pressures of life
- The brain's reward circuits (the dopamine system) get damaged when individuals are under the influence and repeat use magnifies the problem and makes it harder to stop

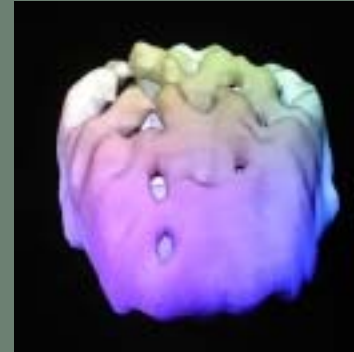
Drug and Alcohol use creates profound changes in brain metabolism.



Normal brain



Underside
surface



Front on surface



Right side surface

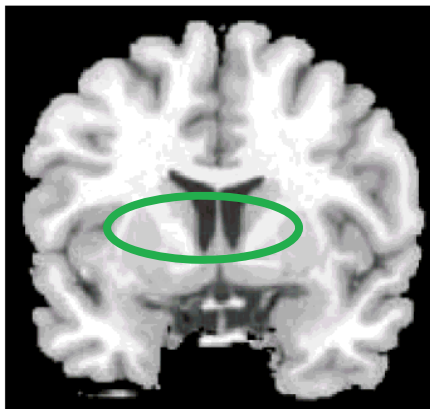
38 year old male with 17 years of heavy weekend alcohol use marked overall decreased activity

SPECT images courtesy of D.G. Amen, MD.

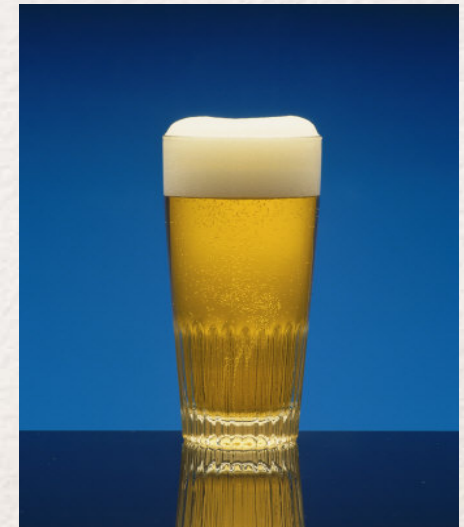
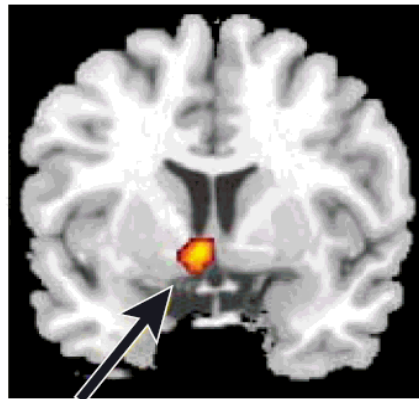
fMRI images of brain's reward system demonstrate how the brain reacts to environmental triggers.

- Social drinkers
- Neutral cues vs. Alcohol cues
- Alcohol dependent (non-treatment seeking)

Social Drinkers

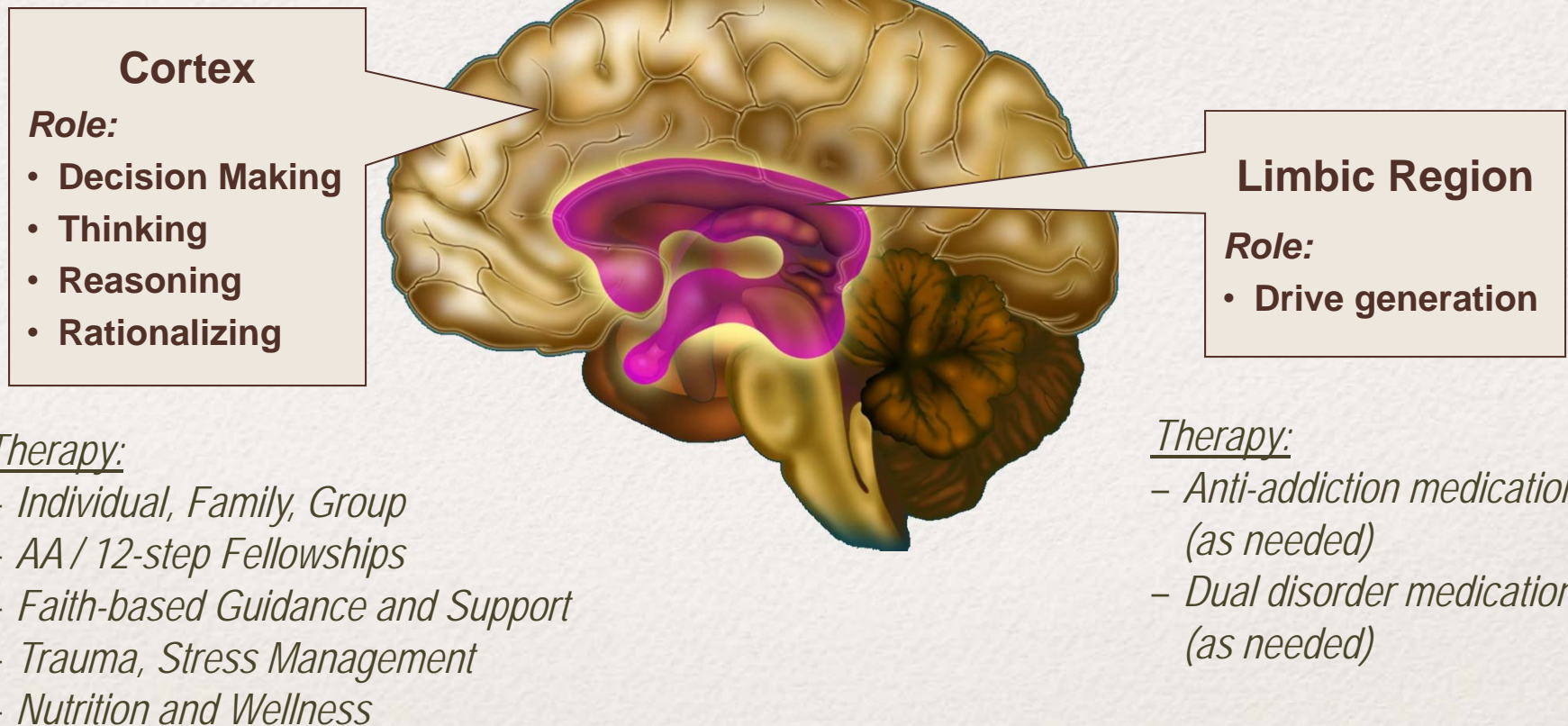


Alcohol Dependent
Individuals



Myrick, Anton, Li et al., *Archives of General Psychiatry*, April 2008

Addiction requires a multi-dimensional treatment approach to help sustain long-term sobriety.



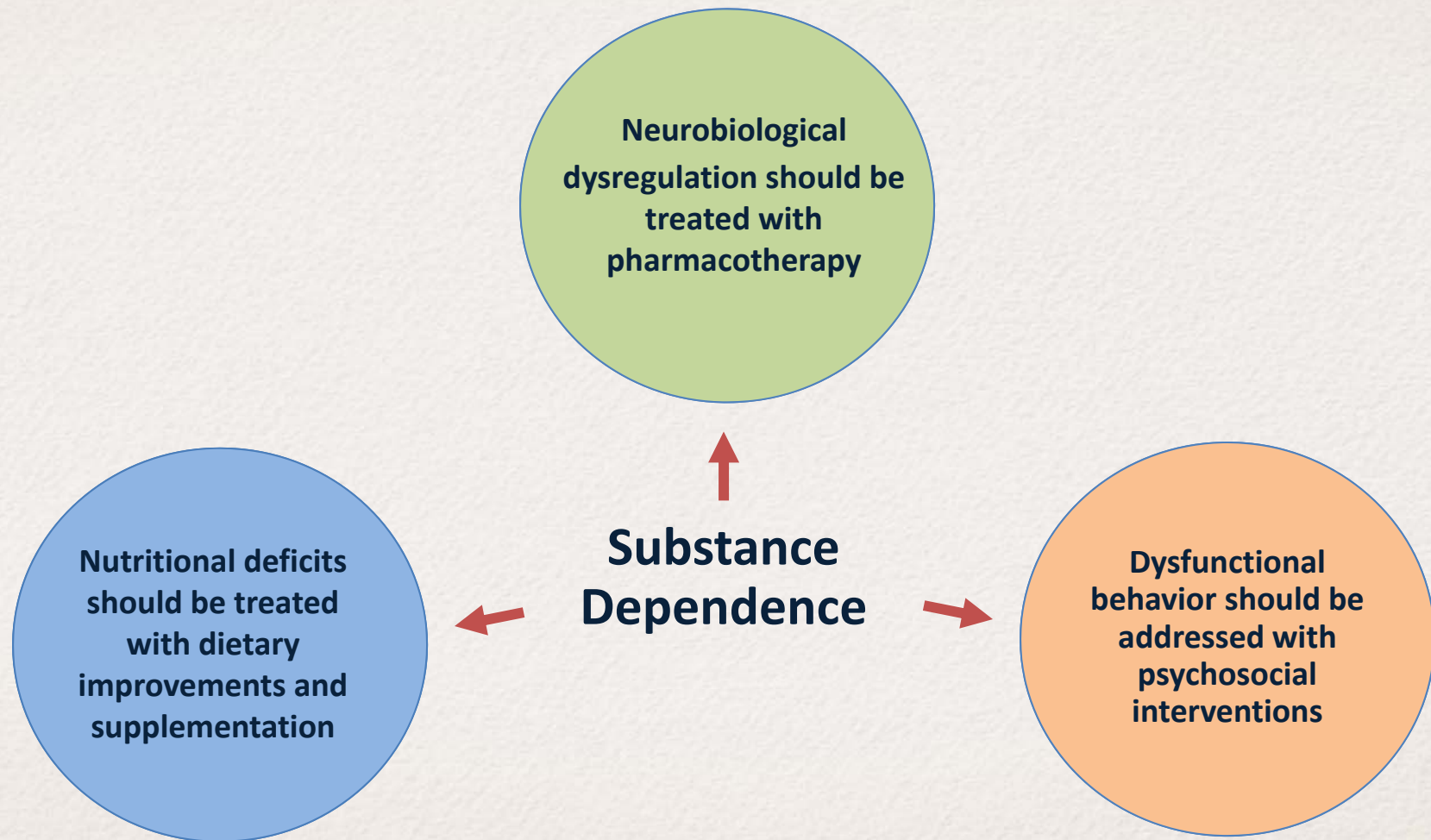
Typically, substance abuse is the result of or a part of other behavioral health disorders.

- Depression (50 – 75% of alcoholics)
- Anxiety Disorders
- Bipolar Disorders
- Schizophrenia
- ADD/ADHD

A Complex Disorder

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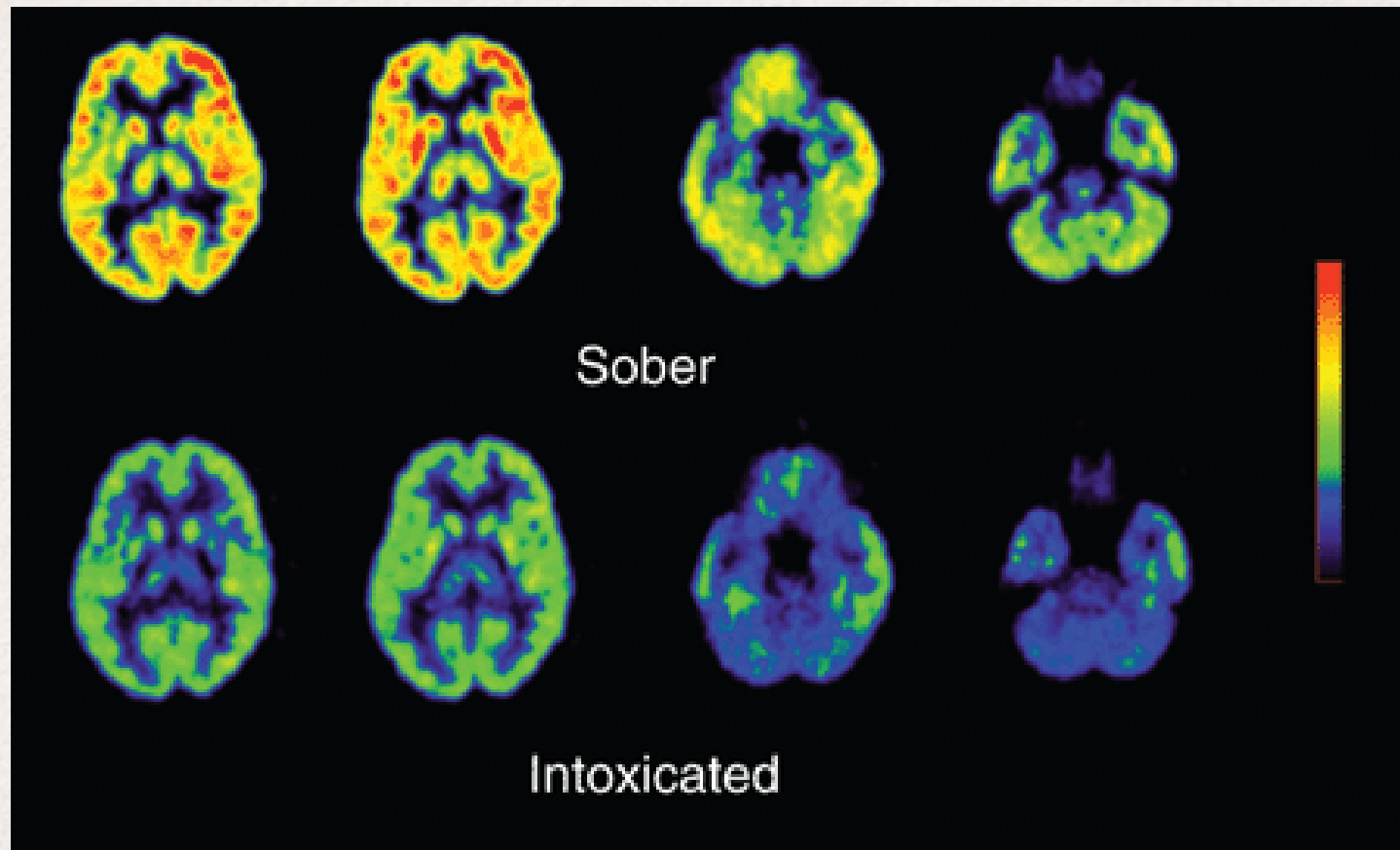
- Addiction is an acute condition that should be effectively treated with detoxification
- Treatment is expected to produce lasting reduction in symptoms following termination of treatment
- Relapse after treatment is often considered a treatment failure
- Treatment doesn't work

Top Addictive Substances

Alcohol, Marijuana & Painkillers

Alcohol

- Alcoholism is the third leading disease causing death in the US behind cancer and heart disease
 - Over 100,000 Americans a year die from alcohol
- Alcohol and drug problems are the second most common mental disorder (6-7% of all adults)
- Approximately 50% of the risk is attributed to genetics
 - Genetic factors in combination with other biological or environmental factors
 - Alcoholism may arise without any apparent family history of dependence; caused by environmental or interpersonal factors
- Most hospital healthcare systems do not have treatment programs for alcohol and drug addiction



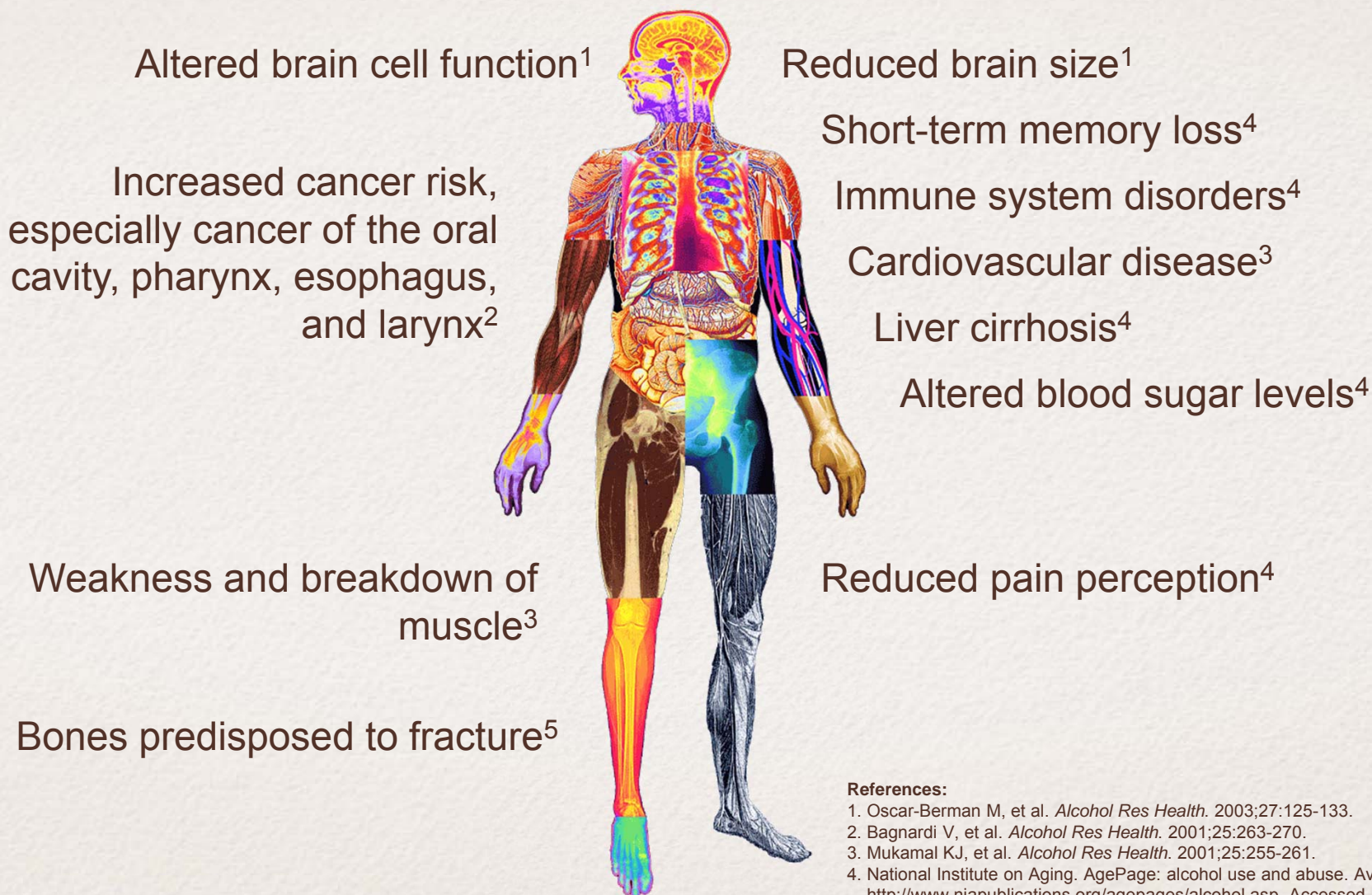
Alcohol drinking markedly reduces brain metabolism

Source: National Institute on Alcohol Abuse and Alcoholism. Dec 2008

Impact of Chronic Alcohol Use

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References:

1. Oscar-Berman M, et al. *Alcohol Res Health*. 2003;27:125-133.
2. Bagnardi V, et al. *Alcohol Res Health*. 2001;25:263-270.
3. Mukamal KJ, et al. *Alcohol Res Health*. 2001;25:255-261.
4. National Institute on Aging. AgePage: alcohol use and abuse. Available at: <http://www.niapublications.org/agepages/alcohol.asp>. Accessed April 4, 2007.
5. Turner RT. *Alcohol Clin Exp Res*. 2000;24:1693-1701.

Medications for Alcohol Dependence

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Antabuse[®]
(disulfiram)¹



30 tabs/month*
(1 tab/day)

1951

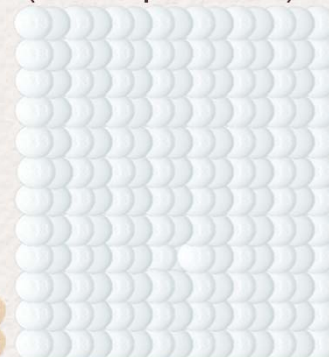
ReVia[®]
(naltrexone)²



30 tabs/month*
(1 tab/day)

1994

Campral[®]
(acamprosate)³



180 tabs/month*
(2 tabs, 3x/day)

2004

VIVITROL[®]
(naltrexone for
extended-release
injectable suspension)⁴



1/month

2006

1. Antabuse full Prescribing Information. Odyssey Pharmaceuticals, Inc.
2. ReVia full Prescribing Information. Duramed Pharmaceuticals, Inc.
3. Campral full Prescribing Information. Merck Santé s.a.s.
4. VIVITROL full Prescribing Information. Alkermes, Inc.



- Vivitrol* (380 mg/month)
- Campral* (2gm/day)
- Naltrexone (50mg/day)
- Antabuse (250mg/day)
- Baclofen
- Abilify (up to 10-15mg/day)
- Topomax (200-300mg/day)
- Ondansetron

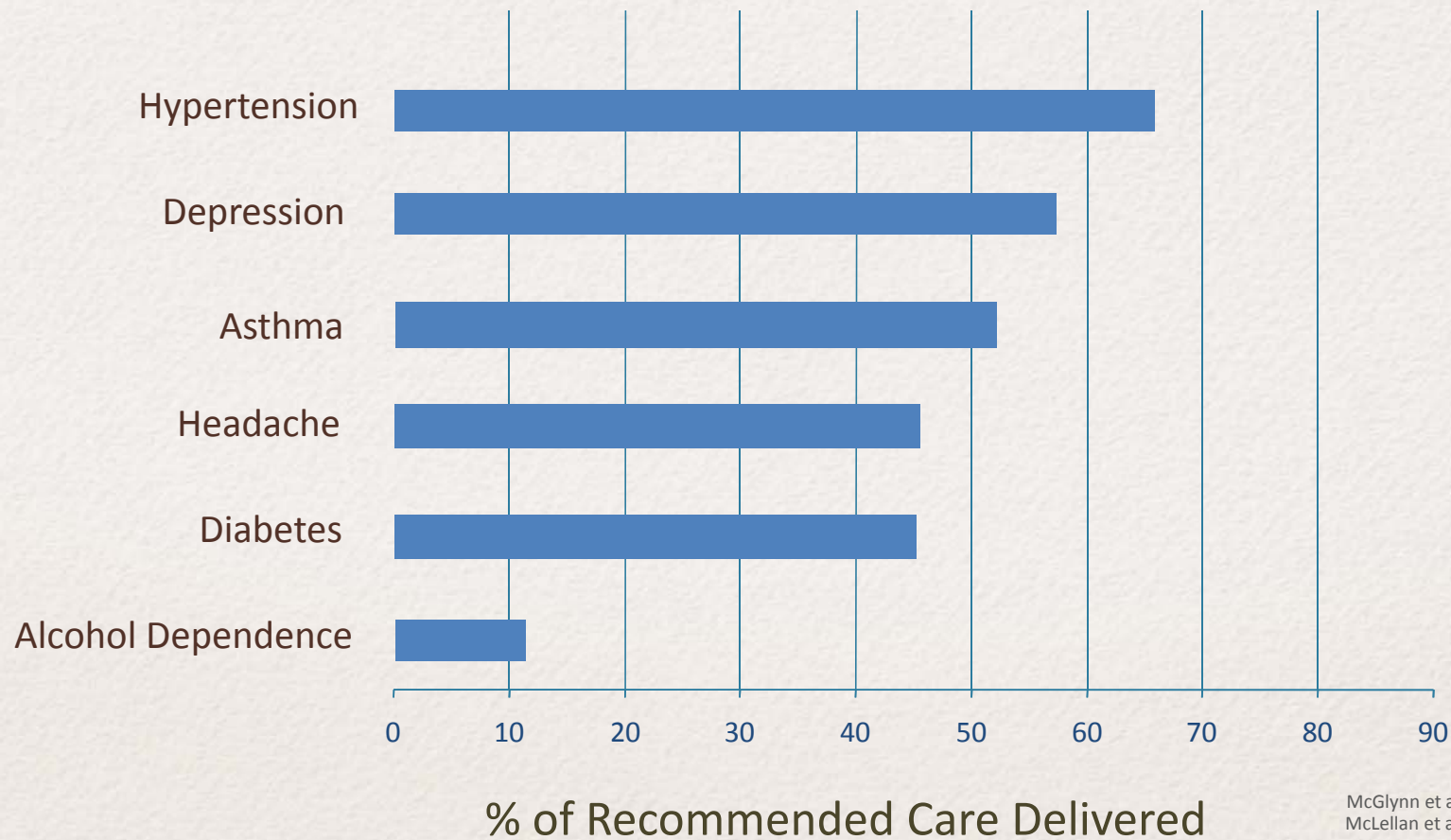
*Highly recommended for every alcoholic

GABA and Glutamate Systems:

- Increase the effects of GABA, the major inhibitory neurotransmitter in the brain
- Inhibit the effects of glutamate, the major excitatory neurotransmitter in the brain
- Contribute to decreased anxiety and increased sedation during acute alcohol intake

- Initiate as soon as possible after alcohol withdrawal when a patient achieves abstinence
 - Maintain treatment if patient relapses
- Recommended dose: two 333mg tablets taken three times a day
- After 2 weeks change to three tabs BID
- Patients with moderate renal impairment* should have a starting dose of 1 x 333mg, 3 times daily
- Can be taken with or without meals

The number of Americans who seek help for alcohol addiction significantly trails other conditions.



McGlynn et al. (2003). NEJM, 348: 2635
McLellan et al. (2000). JAMA, 284: 1689

Marijuana

Pot is addicting!!!!!!!!!!!!

- Often called *pot*, *grass*, *reefer*, *weed*, *Mary Jane*, or *MJ*— Marijuana is a mixture of dried, shredded leaves, stems, seeds, and flowers of *Cannabis sativa*—the hemp plant
- There are 250 different substances in MJ smoke
 - THC is only one of them
- The THC from just one joint takes 7 days to get out of the body (42 days to get out completely if used daily)
- MJ withdrawal starts 3 weeks after the last dose
 - Withdrawal side affects include: irritability, insomnia, decreased appetite, increased aggression and cravings
- MJ is a gateway drug

Pot is dangerous and impairs cognitive ability!

- The smoke from a MJ cigarette (joint) is 4 times MORE carcinogenic than the smoke from a cigarette
- Heart attack risk - MJ increases heart rate by 20-100%
 - 5-fold increase in risk within the first hour after smoking
- MJ's negative impact on learning can last for days or even weeks after the high and relaxation wear off
- MJ use impairs physical and mental health, cognitive abilities, social life and career status
- MJ injures brain functioning
 - Impaired short-term memory, driving
 - Difficulty with complex tasks and learning
 - Poor decision-making, risky behavior



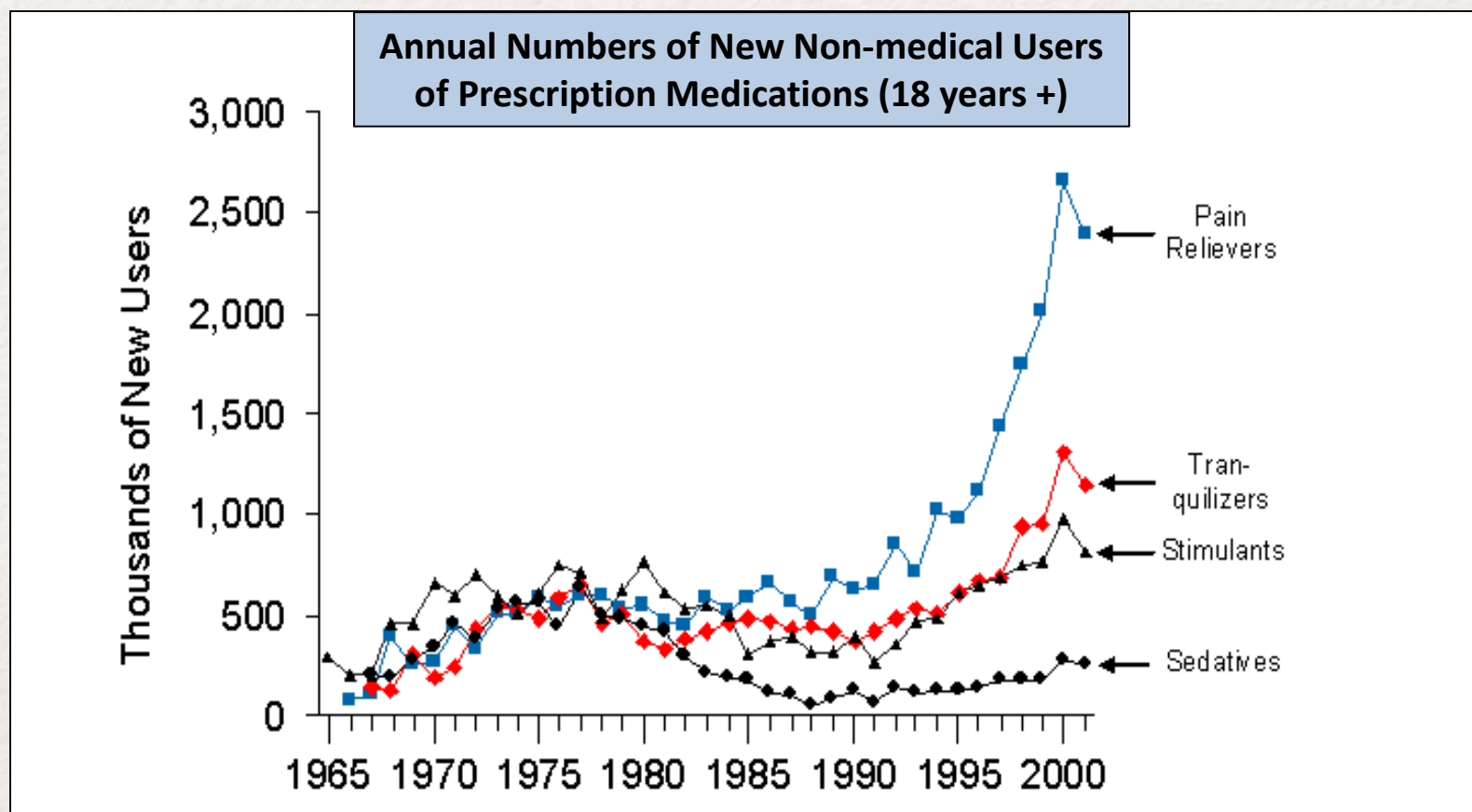
- No specific anti-addiction medications have been developed specifically for MJ
 - Many candidates are currently in research trials
- Medication options that can reduce anxiety and enhance sleep (that have no addictive potential)
 - Quetiapine (Seroquel)
 - Trazodone (Desyrel)
 - Hydroxyzine (Vistaril)
 - SSRI's and SNRI's

Generation Rx: The Opioid Epidemic



Over 2 million people in the US are opioid dependent.

- 80% are addicted to pain relievers (Morphine, Oxycodone, etc.)
- 20% are addicted to Heroin



References: Substance Abuse and Mental Health Services Administration. (2002). *Results from the 2001 National Survey on Drug Use and Health National Findings* (Office of Applied Studies), Rockville, MD.

Medications often used to manage Opioid addiction.

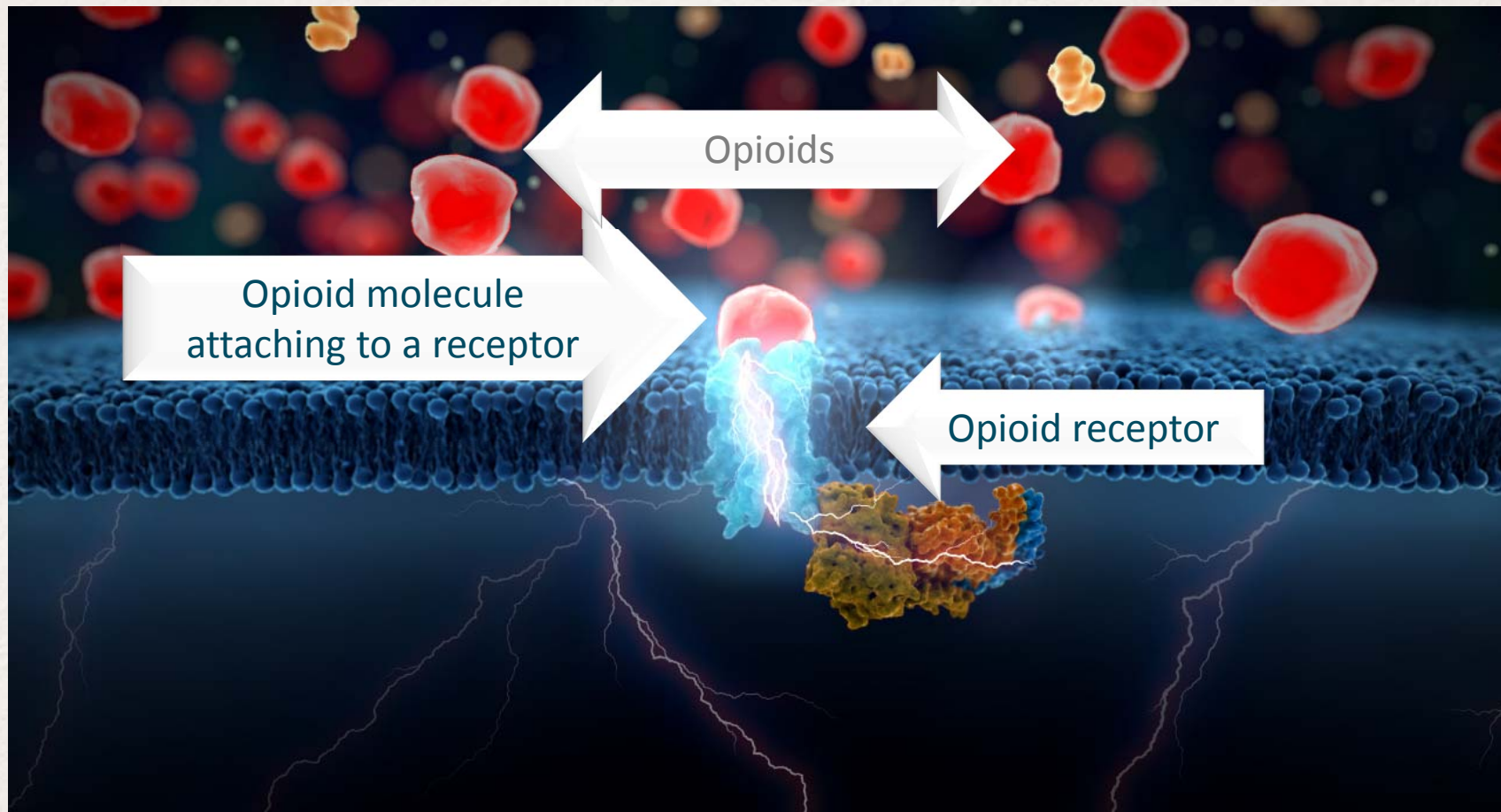
- Suboxone (buprenorphine/naloxone)
- Vivitrol (extended-release, injectable naltrexone)
- Naltrexone
- Methadone

- Removes cravings within 3 days
- If you use heroin or pain pills you can't feel their effects
- If you take too much you are punished
- Safer: Less likelihood of overdose
- The perfect solution for narcotic addiction when used with a comprehensive treatment program

Opioids & “Agonists”

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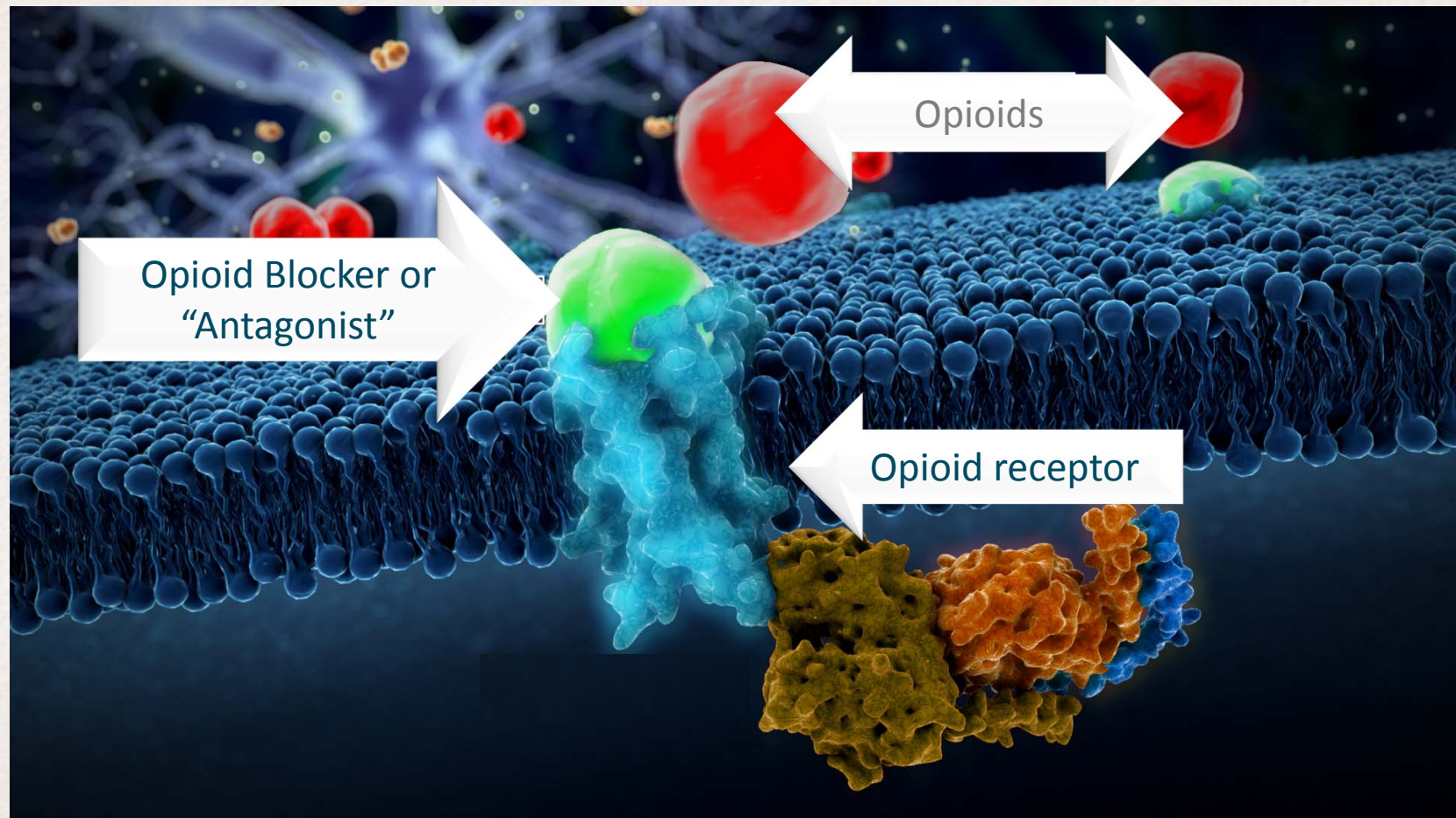
Reference

National Institute of Drug Abuse. Drugs, brains, and behavior. The science of addiction. National Institutes of Health. NIH Pub No. 10-5605. Available at: <http://www.drugabuse.gov/scienceofaddiction/sciofaddiction.pdf>. Last updated August 2010.

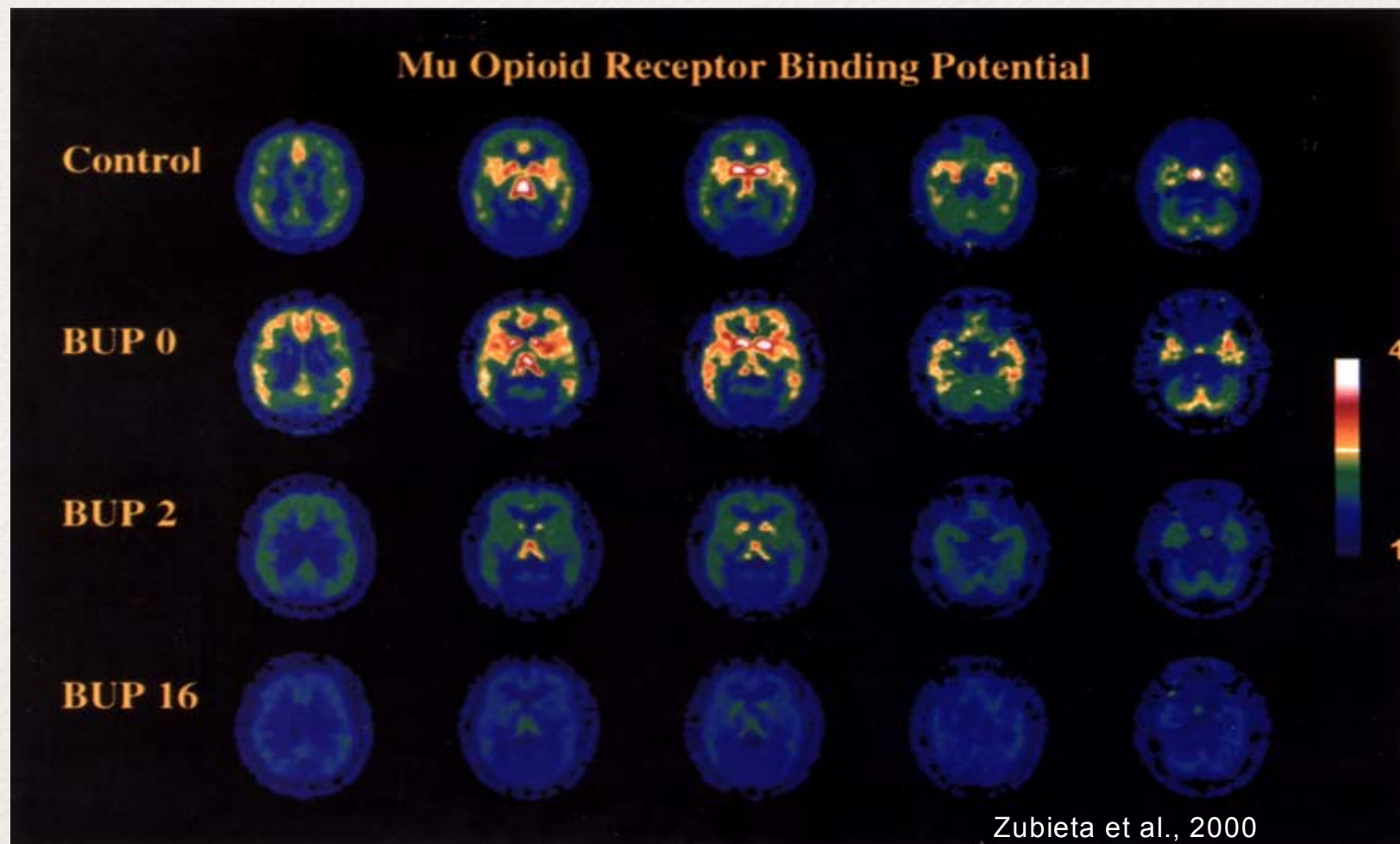
Opioid Blockers aka “Antagonists”

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Buprenorphine Binding Opioid Receptors



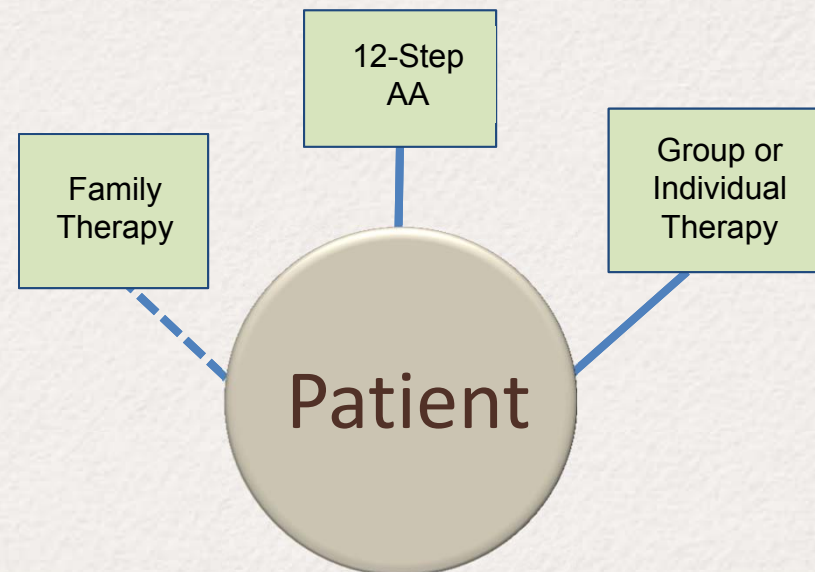
- Vivitrol approved in October 2010 for Opiate Dependence by FDA
- All of the same benefits as in Alcohol Dependence
 - Reduces urge to use Heroin/Pills
 - Blocks euphoria
 - Decreases severity of relapse
- Need to be off opiates for 10-14 days before first injection

It is time to embrace a multi-dimensional approach to fighting drug and alcohol addiction.

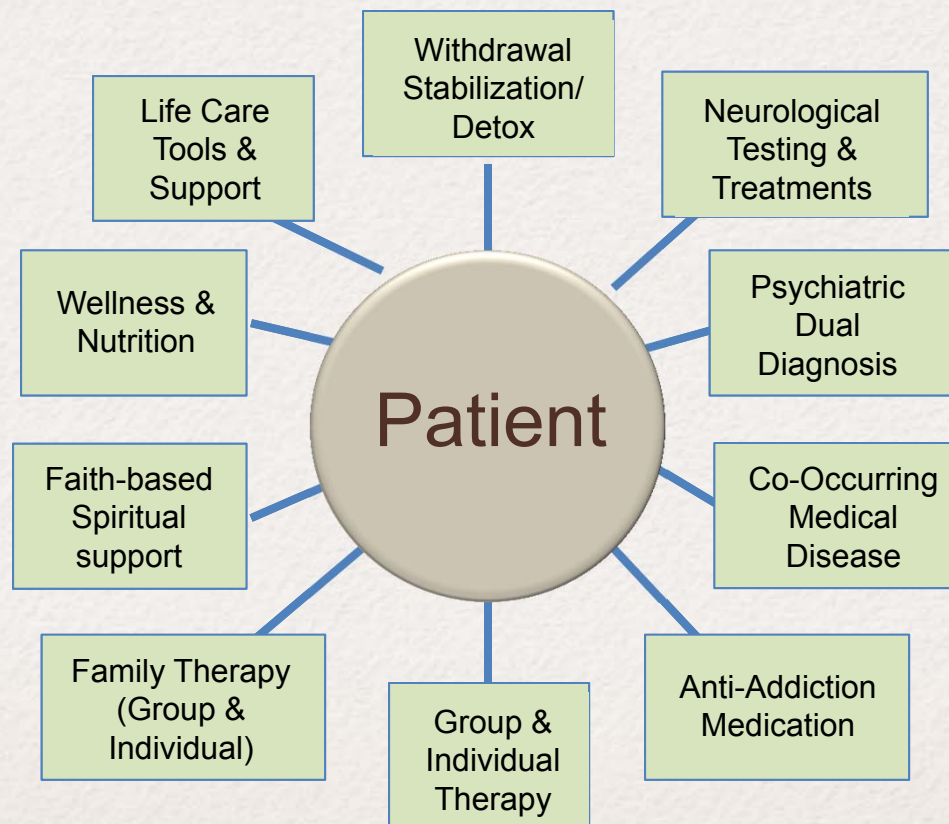
The approach brings the best of what works in recovery to help the individual and family.

- 12 Step/Faith-based Spiritual Support
- Individual, Group and Family Therapy
- Psychiatric Testing, Evaluation and Treatment
- Anti-addiction Medications (if needed)
- Nutrition and Wellness Counseling
- Life Care and Support

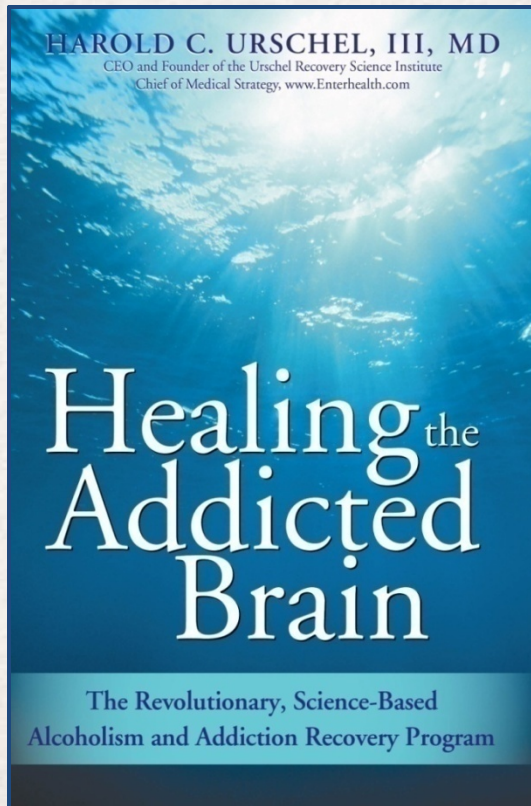
Traditional Treatment Model



The Enterhealth Comprehensive Treatment Model

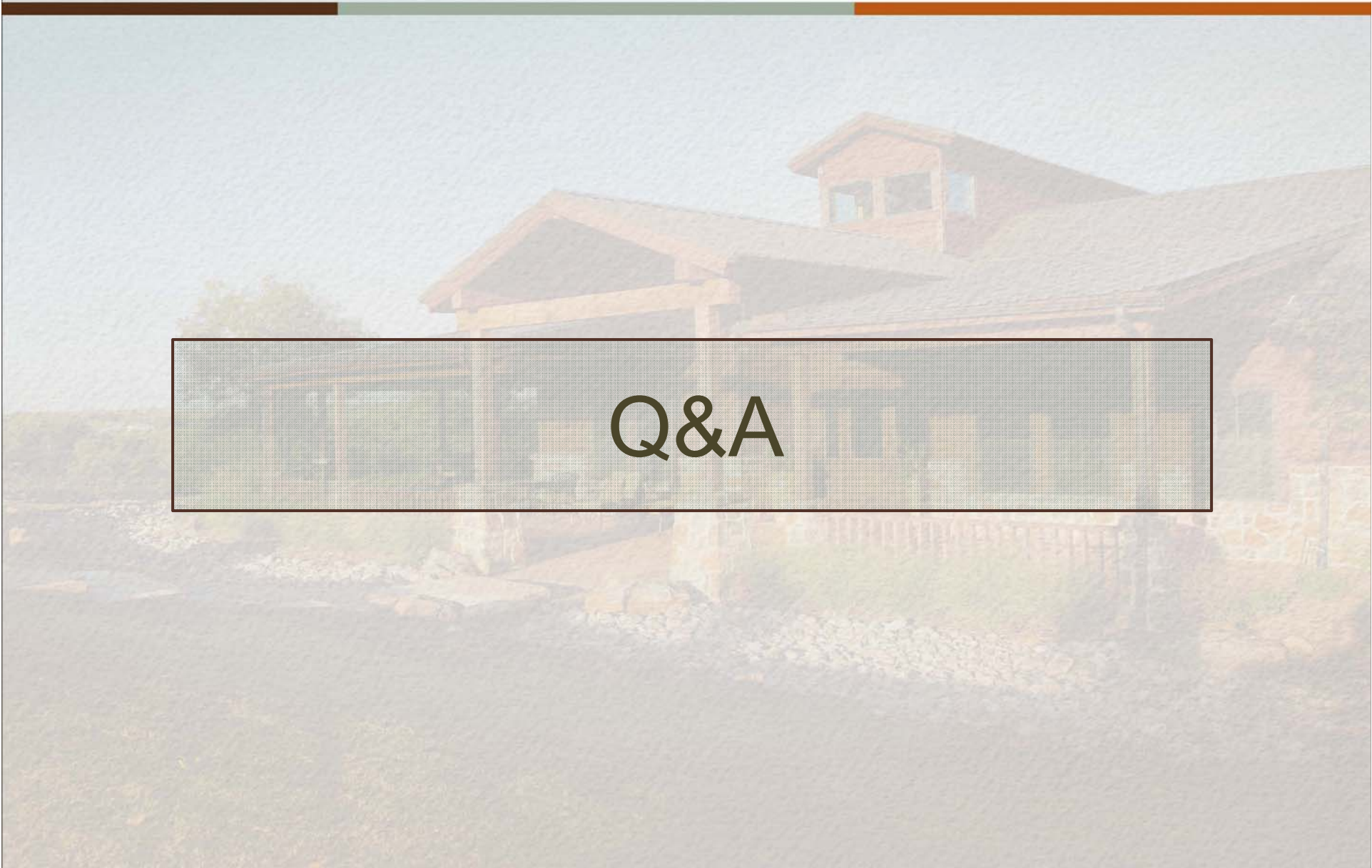


- Alcohol and Drug Addiction is a chronic, medical disease of the brain
- Addiction is a “brain injury” disease
- It takes 4-12 months of complete sobriety for the brain to heal
- A comprehensive long-term treatment approach will achieve the best outcomes for clients
 - Faith-based Spiritual Support/12-step
 - Individual and Family Therapy
 - Psychiatric Treatment
 - Wellness and Nutrition
 - Medication



For a free copy of Chapter One
of “Healing the Addicted Brain”,

Please visit us at:
www.enterhealth.com



Q&A