Initiating and Sustaining Recovery

- Problem severity
  - Mild
  - Moderate
  - Severe

- Problem complexity
  - Addiction
  - Addiction + Mental Illness
  - Addiction + Mental Illness + Housing + Social Supports

- Recovery capital
  - Internal and external resources that can be mobilized

- Access to appropriately designed services
Many Paths Into Recovery

- Solo (natural) recovery
- Peer Assisted
  - Mutual Support groups (i.e. Alcoholics Anonymous)
- Treatment Assisted

Emerging Evidence on Addiction

- The mesolimbic dopamine system (reward pathway)
- Vulnerability for addiction
  - Why do some people develop problems with alcohol and other drugs while other people don’t?
- Long-term effects of addiction
  - How does this impact the recovery process
- Addiction as a chronic illness
Mesolimbic Dopamine System

- This system is a collection of neurons that release the neurotransmitter dopamine.
  - Often called the reward pathway
- This pathway is activated by things that are rewarding.

Mesolimbic Dopamine System

- What behaviors are related to survival?
  - Food, water, sex and nurturing
  - They are rewarding and are considered "natural reinforcers" because they are directly related to our survival
- What assures that we will engage in these behaviors?
  - The release of dopamine

Mesolimbic Dopamine System

- Rewarding experiences tell the brain “do it again” so a behavior will be repeated
  - AOD increase dopamine at a much greater magnitude and duration than natural reinforcers (5 – 10 times greater)
Understanding the Power of Dopamine

Mesolimbic Dopamine System

- The probability of dopamine interacting with a receptor is based upon how much dopamine is released and how many receptors are available.
Vulnerability for Addiction

- Genes and environment contribute to increased risk for AOD problems or can serve as protective factors against AOD problems.

Developmental Vulnerabilities

- The mean age of initiation of drinking alcohol in 2005 was 14.2 years.

- What is happening in the adolescent brain when this occurs?
Developmental Vulnerabilities

- Individuals who are not heavy users of alcohol or other drugs during adolescence and into their early 20s are less likely to develop an addiction in later life.

Biological Vulnerabilities

- Differences between how individuals experience the effects of alcohol and other drugs.
Group One
Usual or normal response

Group Two
- Feelings of intoxication
- Stimulation
- Sedation
- Happiness

3 times more likely to have a family history of alcoholism than members of Group One

Other Biological Vulnerabilities
- One of the dopamine receptors that has been shown to be important in the reinforcing effects of alcohol and other drugs is the dopamine D2 receptor

Dopamine Receptors
- In one study, Ritalin was administered intravenously to test subjects
50% of the subjects experienced negative effects of the stimulant

50% of the subjects experienced positive effects of the stimulant

Those who experienced the pleasurable effects had fewer D2 receptors

D2 Receptors

- A reduction in D2 receptors has been implicated in a reduced sensitivity to rewards (“reward deficiency”)

Other Evidence

- Animal studies have found that increasing D2 receptors significantly reduces alcohol and cocaine use
D2 Receptor Comparison of Non-Alcoholics

**Control Group**
- Non-alcoholic
  - No family history of alcoholism

**Experimental Group**
- Non-alcoholic with:
  - An alcoholic father
  - At least two 1st degree or 2nd degree relatives who were alcoholics
- What has protected the non-alcoholic from the genetic risk factors?

The Role of Environment

- One study looked at environment, D2 receptors and AOD use.
  - PET scans of 20 individually housed monkeys were used to determine D2 receptor availability
  - Monkeys moved from individual housing into social housing with groups of 4 monkeys
  - Social hierarchies were allowed to develop
  - PET scans were used to capture the availability of D2 receptors 3 months after they were assigned to social groups
The Role of Environment

- ▼ cocaine use among dominant monkeys
- ▲ cocaine use among subordinate monkeys
- Recent study in humans has supported these findings (related to social status and social support)

Implications for AOD Problems

- Individuals with low levels of D2 receptors are more vulnerable for AOD problems because the experience is pleasurable
- Individuals with high levels of D2 receptors may protect against AOD use since the experience tends to be unpleasant or aversive
- Environment can affect neurobiology
  - Nurturing
  - Stability
  - Consistency
Mesolimbic Dopamine System

Personal Vulnerabilities

Neurobiological Consequences

- Prolonged AOD use in vulnerable individuals changes brain functioning:
  - Related to memory
  - Related to judgment/decision making
  - Related to the ability to find natural rewards “rewarding”
  - Related to delaying gratification

The Role of Memory

- Memory plays a significant role in:
  - Continued use
  - Attempts to achieve and sustain abstinence
The Role of Memory in Addiction

- The brain records the pleasurable experience through connections to memory and emotion in the amygdala and hippocampus (euphoric recall)
- As a result, dopamine activity increases, not only during a rewarding or pleasurable experience, but also in anticipation of one.
Slides were presented randomly for 33 msec followed by 467 msec neutral slides.

- 33 msec escapes conscious detection.
- Despite no conscious recognition, the limbic system showed activation in response to the slides.

- Recovery of Brain Functioning with Prolonged Abstinence
Dopamine D2 Receptor Availability

Comparison Subject  Addicted Person

Cocaine

Methamphetamine

Alcohol

Effect of Cocaine Abuse on Dopamine D2 Receptors

1. Thickness
2. Surface Area
3. Volume

Non-smoking, light-drinking controls

Brain Reward System
1. Thickness
2. Surface Area
3. Volume

Individuals who remained abstinent after treatment

Individuals who relapsed after treatment
Results

- Non-smoking, light-drinking controls
  - Highest cortical thickness of three groups

- Abstinent after treatment
  - Lower cortical thickness

- Relapsed after treatment
  - Lower cortical thickness
  - Lower total brain reward system surface area
  - Lower volume in certain areas of the brain

Conclusions

- Those who relapsed had greater abnormalities in areas of the brain associated with:
  - Decision making
  - Emotions
  - Reward processing
  - Regulation of internal drives
## Addiction as a Chronic Illness

* Should addiction be considered a chronic illness, similar to hypertension or diabetes?  

### Causes

<table>
<thead>
<tr>
<th>Controllable Risk Factors</th>
<th>Alcohol Related Problems</th>
<th>Asthma</th>
<th>Diabetes</th>
<th>High Blood Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes Limit drinking</td>
<td>Yes Limit exposure to allergens</td>
<td>Yes Limit food intake</td>
<td>Yes Limit fat &amp; salt intake/Diet</td>
<td></td>
</tr>
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<td></td>
</tr>
</tbody>
</table>

| Uncontrollable Risk Factors | Yes | Yes | Yes | Yes |

<table>
<thead>
<tr>
<th>Estimated Genetic Influence</th>
<th>50% – 60%</th>
<th>36% - 70%</th>
<th>80% - 95% Type I</th>
<th>80% - 95% Type II</th>
</tr>
</thead>
<tbody>
<tr>
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### Treatment

<table>
<thead>
<tr>
<th>Alcohol Related Problems</th>
<th>Asthma</th>
<th>Diabetes</th>
<th>High Blood Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Clear Diagnostic Criteria</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Research Based Treatment Guidelines and Protocols</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Effective Patient and Family Education</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

| % Who Follows Treatment Regimens Faithfully | 40% - 60% | 30% | 30% | 30% |
| % Who Relapse Within a Year | 40% - 60% | 50% - 70% | 30% - 50% | 50% - 70% |
Treatment Adherence & Outcomes

- McLellan et. al (2000) found that the most important predictors of poor adherence and poor treatment outcome, for all illnesses, were:
  - Low socioeconomic status
  - Lack of family or social supports
  - Co-occurring psychiatric problems

Addiction as a Chronic Illness

- Historically, treatment of severe and persistent AOD problems has resembled interventions for acute health conditions (e.g., traumatic injuries, bacterial infections)

Implications

- For persons with hypertension & diabetes
  - A recurrence of symptoms (relapse) following treatment cessation is considered evidence of treatment effectiveness
  - This is used to justify devoting resources to continuing treatment

- For persons with alcoholism and addiction
  - A recurrence of symptoms (relapse) following treatment cessation is considered evidence of treatment failure
  - This is used to justify not investing further resources into treatment
  - Treatment needs to shift from an acute care model to recovery oriented systems of care
Lawyer Assistance Program

- LAP services are free, paid for by state bar dues
- LAP handles everything from career counseling to stress, depression, substance use disorders and mental health issues
- LAP services are COMPLETELY confidential, subject to attorney/client privilege
  info@nclap.org

References

References

One of the free resources available to you as a State Bar member is the Lawyer Assistance Program (LAP). From time to time, lawyers encounter a personal issue that, left unaddressed, could impair his or her ability to practice law. Accordingly, the LAP was created by lawyers for lawyers to assure that free, confidential assistance is available for any problem or issue that is impairing or might lead to impairment.

**Lawyers at Particular Risk**

Of all professionals, lawyers are at the greatest risk for anxiety, depression, alcoholism, drug addiction, and even suicide. As many as one in four lawyers are affected. This means it is likely that you, an associate, a partner, or one of your best lawyer friends will encounter one of these issues. Whether you need to call the LAP for yourself or to refer a colleague, all communications are completely confidential.

**Anxiety and Depression**

Anxiety and depression often go hand-in-hand. These conditions can be incapacitating and can develop so gradually that a lawyer is often unaware of the cumulative effect on his or her mood, habits, and lifestyle. Each condition is highly treatable, especially in the early stages. Asking for help, however, runs counter to our legal training and instincts. Most lawyers enter the profession to help others and believe they themselves should not need help. The good news is that all it takes is a phone call. The LAP works with lawyers exclusively. The LAP has been a trusted resource for thousands of lawyers in overcoming these conditions.

**Alcohol and Other Substances**

Often a lawyer will get depressed and self-medicate the depression with alcohol. Alcohol is a central nervous system depressant but acts like a stimulant in the first hour or two of consumption. The worse you feel, the more you drink initially to feel better, but the more you drink, the worse you feel. A vicious cycle begins. On the other hand, many alcoholic lawyers who have not had depression report that their drinking started normally at social events and increased slowly over time.

There is no perfect picture of the alcoholic or addicted lawyer. It may be surprising to learn that he or she probably graduated in the top one-third of the class. Also surprising, lawyers may find themselves in trouble with addiction due to the overuse or misuse of certain prescription medications that were originally prescribed to address a temporary condition. Use of these kinds of medications, combined with moderate amounts of alcohol, greatly increases the chances of severe impairment requiring treatment. The LAP knows the best treatment options available, guides lawyers through this entire process, and provides ongoing support at every stage.

LAP recognizes alcoholism, addiction, and mental illness as diseases, not moral failures. The only stigma attached to these illnesses is the refusal to seek or accept help.

**Confidentiality**

All communications with the LAP are strictly confidential and subject to the attorney-client privilege. If you call to seek help for yourself, your inquiry is confidential. If you call as the spouse, child, law partner, or friend of a lawyer whom you suspect may need help, your communication is also treated confidentially and is never relayed without your permission to the lawyer for whom you are seeking help. The LAP has a committee of trained lawyer volunteers who have personally overcome these issues and are committed to helping other lawyers overcome them. If you call a LAP volunteer, your communication is also treated as confidential.

The LAP is completely separate from the disciplinary arm of the State Bar. If you disclose to LAP staff or to a LAP volunteer any misconduct or ethical violations, it is confidential and cannot be disclosed. See Rules 1.6(c) and 8.3(c) of the Rules of Professional Conduct and 2001 FEO 5. The LAP works because it provides an opportunity for a lawyer to get safe, free, confidential help before the consequences of any impairment become irreversible.
Know the signs. Make the call. You could save a colleague’s life.

TAKE THE TEST FOR DEPRESSION

YES NO
1. Do you feel a deep sense of depression, sadness, or hopelessness most of the day?
2. Have you experienced diminished interest in most or all activities?
3. Have you experienced significant appetite or weight change when not dieting?
4. Have you experienced a significant change in sleeping patterns?
5. Do you feel unusually restless…or unusually sluggish?
6. Do you feel unduly fatigued?
7. Do you experience persistent feelings of hopelessness or inappropriate feelings of guilt?
8. Have you experienced a diminished ability to think or concentrate?
9. Do you have recurrent thoughts of death or suicide?

If you answer yes to five or more of these questions (including questions #1 or #2), and if the symptoms described have been present nearly every day for two weeks or more, you should consider speaking to a health care professional about treatment options for depression.

Other explanations for these symptoms may need to be considered. Call the Lawyer Assistance Program.


TAKE THE TEST FOR ALCOHOLISM

YES NO
1. Do you get to work late or leave early due to drinking?
2. Is drinking disturbing your home life?
3. Do you drink because you are shy with other people?
4. Do you wonder if drinking is affecting your reputation?
5. Have you gotten into financial difficulties as a result of drinking?
6. Does drinking make you neglect your family or family activities?
7. Has your ambition decreased since drinking?
8. Do you often drink alone?
9. Does drinking determine the people you tend to be with?
10. Do you want a drink at a certain time of day?
11. Do you want a drink the next morning?
12. Does drinking cause you to have difficulty sleeping?
13. Do you drink to build up your confidence?
14. Have you ever been to a hospital or institution because of drinking?
15. Do family or friends ever question the amount you drink?

If your answer is yes to two or more of these questions you may have a problem. Call the Lawyer Assistance Program.

FREE • SAFE • CONFIDENTIAL

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