

## Is Addiction Really a "Disease"?

Kevin T. McCauley, M.D.  
Director of Medical Education  
Sober Living By The Sea  
Newport Beach, California

[AddictionDoctor.com](http://AddictionDoctor.com)

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## "Choice" vs. "Disease"

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| • Free Will exists                | • No Free Will                       |
| • Responsibility                  | • No Responsibility                  |
| • Can stop                        | • Can't stop                         |
| • Punishment and Coercion DO work | • Punishment and Coercion DON'T work |
| • BEHAVIORS                       | • SYMPTOMS                           |

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Cause:  
- sociopathy?  
- criminality?  
- self-centeredness?  
- character defects?  
- addict personality?  
- demonic possession?  
- gang culture?  
- bad parenting?

Behavior:  
- lying  
- cheating  
- stealing  
- irresponsibility  
- denial  
- selfishness  
- lack of caring



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# Is Addiction Really a "Disease?"

so this is a question about **CAUSALITY**

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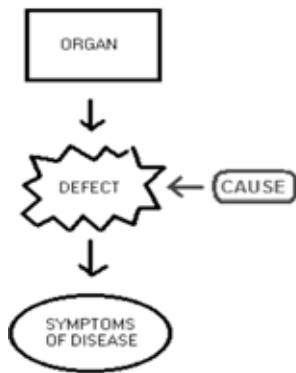
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## The Disease Model

(a CAUSAL model)



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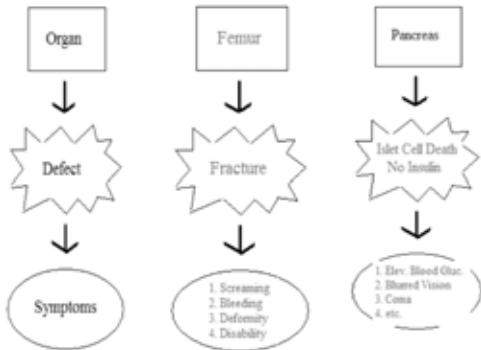
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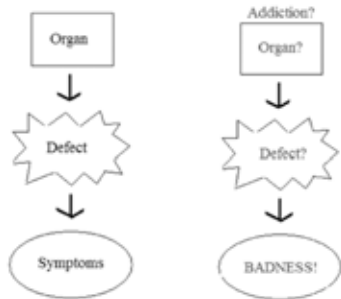
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*If ever we could fit addiction into this model, then it would win admission into "The Disease Club". . .*



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***And now, we finally can ...***

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***Addiction is a BRAIN disease***

- *The brain's a HARD organ*
- *No good tests for brain diseases*
- *People with brain diseases start out at a disadvantage*



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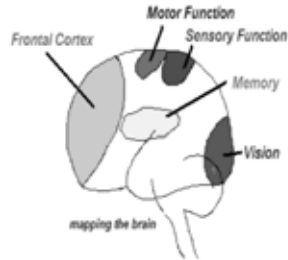
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## The Frontal Cortex

- *Confers semantic content onto objects in the world*
- *Emotional meaning*
- *Seat of the Self and Personality*
- *Love, Morality, Decency, Responsibility, Spirituality*
- *Conscious*



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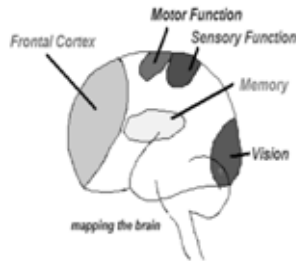
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## The Frontal Cortex: Defective in addiction?

- *Where drugs work?*
- *Addict personality?*
- *Sociopathy?*
- *Self-centeredness?*
- *Character defects?*
- *Immorality?*
- *Weak will?*
- *Poor socialization?*
- *Bad parenting?*



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## But drugs don't work in the Frontal Cortex . . .

- *Drugs work in the Midbrain*



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**The midbrain is a scary, spooky, fascinating place . . .**

What does it handle?

- Love?
- Morality?
- Decency?
- Responsibility?
- Spirituality?
- Free Will?
- Conscious Thought?



NO . . . the midbrain is a way-station for incoming sensory information on the way to the cortex . . .

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**The Midbrain is the *SURVIVAL* brain**

- Not conscious
- What handles the next thirty seconds
- A life-or-death processing station for arriving sensory information



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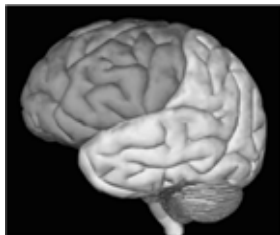
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**Frontal "Cortism"**

- Human prejudice in favor of the cortex
- Belief that the cortex is ALWAYS stronger than the midbrain
- Illusion that we are fully conscious of all our brain's activities
- Neurologic evidence tells us otherwise (ex. "blindsight")



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***Mice preferentially self-administer cocaine ONLY to the Reward Centers of the Midbrain***

- *To the exclusion of all other survival behaviors*
- *To the point of death*



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***Mice get addicted to drugs, but ...***

- *Mice don't weigh moral consequences*
- *Mice don't consult their "Mouse God"*
- *Mice aren't sociopaths*
- *Mice don't have bad parents*
- *There are no "Mouse Gangs"*



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***Mice studies separate correlation from causation***

**Addiction can exist where "behavioral" variables do not apply**

Moral, personality, and social learning variables can sometimes *go along* with addiction

But they cannot *cause* addiction

Nor can addiction *cause them*

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***The Drug becomes Survival at the level of the unconscious . . .***



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***The addicted brain is quantitatively different from the normal brain***

*(it's not just a beer anymore . . .*

*. . . it's the main way of coping with life)*

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***What causes that change?***

***What makes the addicted brain fundamentally different from the normal brain?***

*(You're not going to like this . . .)*

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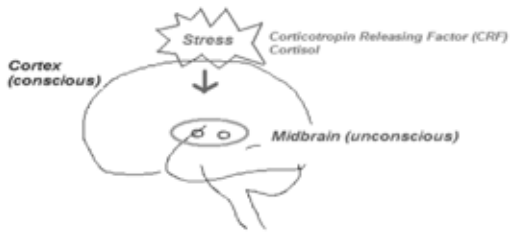
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**STRESS**: the causal agent in addiction



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**We all face stress, yes . . .  
But we don't all:**

- Face the same *severity* of stress
- Face the same *pattern* of stress
- Have the functioning *coping mechanisms*
- Come to the table with the *same brain*

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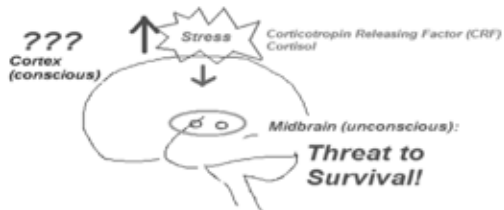
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**Stress changes the physiology of the  
midbrain . . .**



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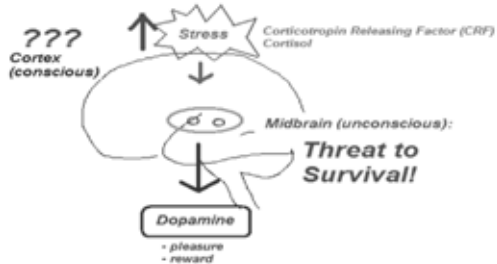
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**DOPAMINE mediates the experience of pleasure**



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**Brain Perceptual Systems (all of them):**

1. Vision
2. Hearing
3. Touch
4. Smell
5. Taste
6. Linear Acceleration
7. Angular Acceleration
8. Gravity (Proprioception)
9. Blood pO<sub>2</sub> and pCO<sub>2</sub>
10. Pleasure

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**Stress change the brain's ability to process Dopamine (pleasure)**



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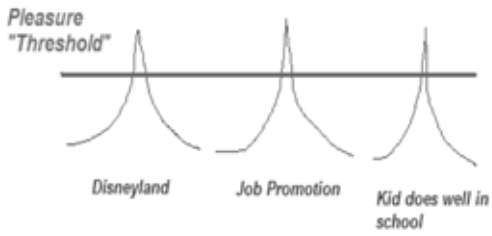
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**The Brain has a Hedonic "Set Point"**




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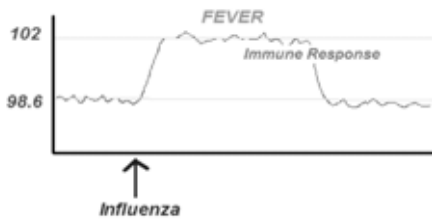
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**Another "set point" in the brain . . .**




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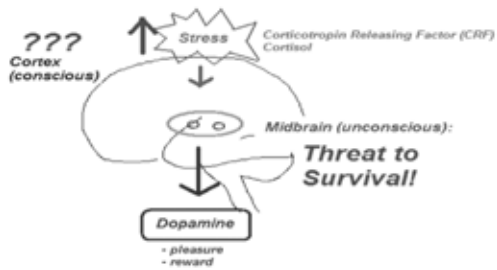
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**The Dopamine System changes in conditions of severe, chronic stress**




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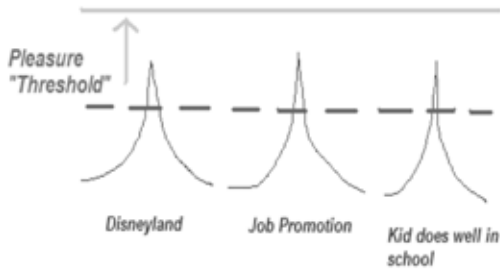
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**High stress hormone levels reset the brain's pleasure "set point"**



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**Change in Hedonic Set Point:  
Old pleasures don't show up**



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**Anhedonia: Pleasure "deafness"**

- *The patient is no longer able to derive normal pleasure from those things that have been pleasurable in the past*

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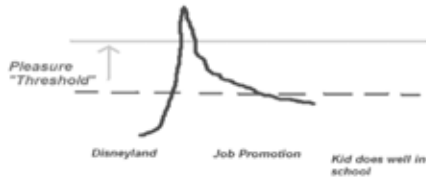
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*What DOES the midbrain recognize?*



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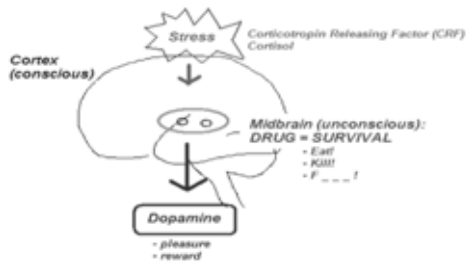
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*The Dopamine surge causes the drug to be tagged as the new, #1 coping mechanism for all incoming stressors ...*



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*Now that the midbrain has found what secures **survival** ...*

*... how does it **motivate** the individual to repeat that behavior?*

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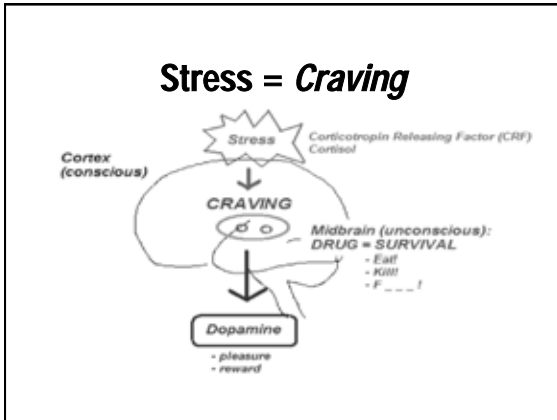
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- ### Why the "Choice" argument fails ...
- It fails to take into account **CRAVING**
  - It measures addiction only by the addict's external **behavior**
  - It ignores the **suffering** of the patient
  - You don't actually have to have drug use for the defective physiology of addiction to be active
  - The addict cannot choose to not **crave**

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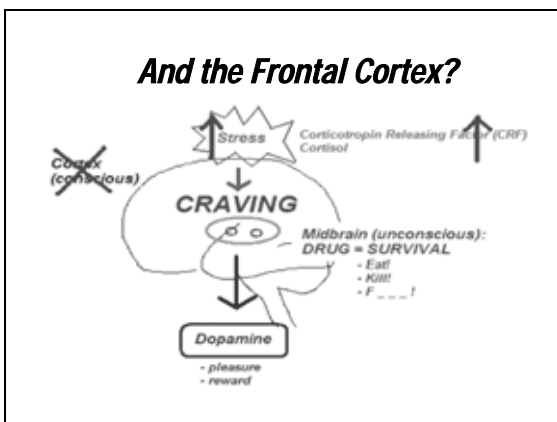
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*It's not that the addict doesn't  
have "values" . . .*

*It's that in the midst of survival panic  
the addict cannot draw upon those values  
to guide their behavior . . .*

*The midbrain now reigns . . .*

*And conscious thought becomes constricted.*

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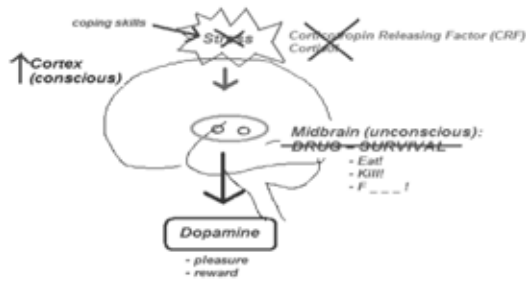
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*With the installation of coping mechanisms  
(A.A.), the Cortex comes back "on-line" and  
Free Will returns...*



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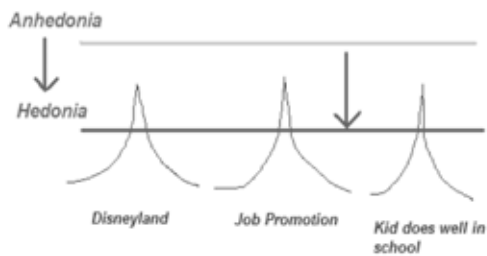
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**Then . . .**



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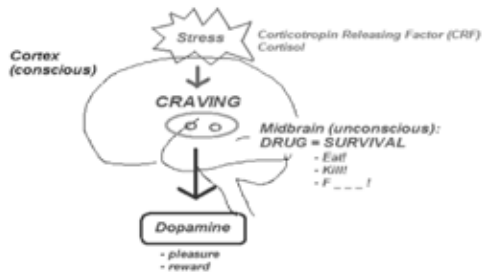
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### The Dopamine Hypothesis of Addiction




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### Dopamine-Releasing Chemicals

- Alcohol & Sedative/Hypnotics
- Opiates/Opioids
- Cocaine
- Amphetamines
- Entactogens (MDMA)
- Entheogens/Hallucinogens
- Cannabinoids
- Inhalants
- Nicotine
- Caffeine
- Steroids

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### Dopamine-Releasing Behaviors

- Food (Bulimia & Binge Eating)
- Sex
- Relationships
- Other People  
("Codependency," Control)
- Gambling
- Cults
- Performance  
("Work-aholism")
- Collection/Accumulation  
("Shop-aholism")
- Rage/Violence
- Media/Entertainment

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## ***The Full Spectrum of Addiction***

- Alcohol & Sedative/Hypnotics
- Opiates/Opioids
- Cocaine
- Amphetamines
- Entactogens (MDMA)
- Entheogens/Hallucinogens
- Cannabinoids
- Inhalants
- Nicotine
- Caffeine
- Steroids
- Food (Bulimia & Binge Eating)
- Sex
- Relationships
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- Media/Entertainment

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## ***Definition of Addiction:***

*Addiction is a dysregulation of the midbrain dopamine (pleasure) system due to unmanaged stress resulting in symptoms of decreased functioning, specifically:*

1. *Loss of control*
2. *Craving*
3. *Persistent drug use despite negative consequences*

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***Addiction fits the "Disease Model!"***




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***But questions still remain ...***

- Why do addicts “love” drugs?
- Where does spirituality fit in with all this brain science?
- Does punishment/coercion work?

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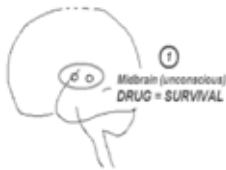
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***Addiction Part One:***

- *misperception of the hedonic aspects of the drug*

And

- *attribution of survival salience to the drug on the level of the unconscious*



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***THEN ...***

- *Then comes the second part of addiction ...*
- *After the midbrain misperceives the hedonic/survival saliency of the drug, that aberrant perception is then delivered via the Median Forebrain Bundle ...*

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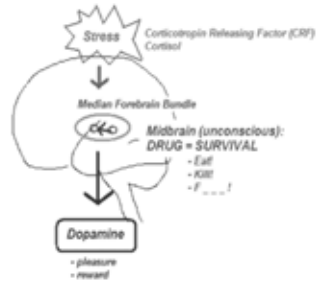
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**Median Forebrain Bundle:**  
carries the aberrant perception up...



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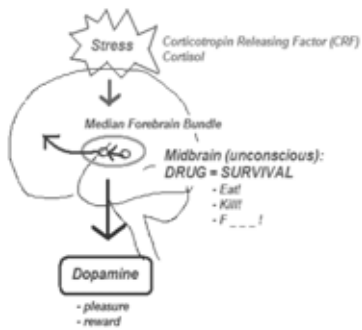
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**And the next step?**



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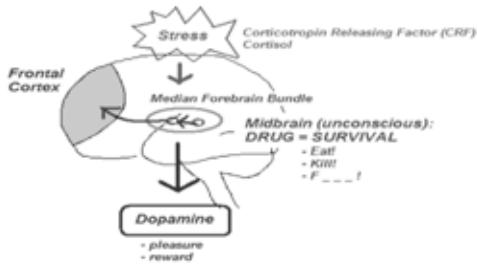
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**MFB delivers aberrant perception of drug's hedonic/survival salience to the Frontal Cortex . . .**



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### Addiction Part Two:

- The drug takes on personal meaning
- The addict develops an emotional relationship with the drug
- The addict derives their sense of self and exerts agency through the drug



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### The Two Tasks of Addiction Treatment:

1. To give the addict workable, credible tools to proactively **manage stress and decrease craving**
2. For each individual addict, **find the thing which is more emotionally meaningful than the drug** - and displace the drug with it

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### The Division of Labor:



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**Punishment won't stop drug use because the drug is *survival***

- Nothing's higher than survival
- No threat matches loss of survival
- The addict must first secure survival before attending to anything else
- And the survival imperative exists at the level of the unconscious




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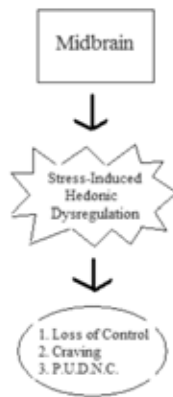
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**Something very important happened when we were finally able to call addiction a "disease" . . .**




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**If Addiction is a "Disease," then ...**

- Addicts are patients!
- Addicts have the same rights as all patients
- All the ethical principles that apply to other patients now also apply to addicts
- Cannot discriminate against addicts without violating equal protection laws
- Physicians have a duty to defend addicted patients from those with agendas that would do them harm
- **Addiction has parity**

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**What if we took  
punishment out of the treatment?**

*(Is there a group of addicts we don't punish?)*

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**PILOTS!**



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**Treatment Outcome Variance in  
Pilots Treated for Alcoholism:**

*"The United States Navy enjoys a 95-97% return to flying status rate in its pilots treated for alcoholism."*

*- Joseph A. Pursch, M.D.*

*"Since the inception of its impaired pilot program in conjunction with the FAA and ALPA EAPs, UAL has an 87% return to flight status rate in pilots treated for alcohol problems."*

*- Stanley Mohler, M.D.*

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**The “Occupational Model”**

- Risk management > Zero-tolerance
- Inpatient Treatment
- Rapid Return to Duty
- Extended Aftercare/Sober Living
- Testing, Testing, Testing!
- Peer-supported, Societal encouragement
- Capabilities emphasized over Infirmities
- Not allowed to take refuge in the sick role

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**Questions?**

*References available on request*

*Please contact:*

*Kevin McCauley, M.D.*

*Sober Living By The Sea, Newport Beach, CA*

*(949) 706-9652*

*[kevinmccauley@hotmail.com](mailto:kevinmccauley@hotmail.com)*

*Please also see: [www.addictiondoctor.com](http://www.addictiondoctor.com)*

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